

Title Index

A

- Air Flow Variations Within a Corebox: A Study of Vent Open Area and Sand Variables (96-120) 951
- Al-7Si-0.3Mg Cast Alloy: A New Approach to Property Improvement (96-165) 1175
- Analytical Pyrolysis for Detection of Benzene Potential in Sand-System Coals (96-110) 865
- Application of a Hotbox Sodium Silicate Binder to the Foundry Industry (96-49) 837
- Application of FEM to Predict Hardness Distribution of Air-Impact, Compacted Green Sand Molds (96-47) 491
- Application of Induction Ladle Furnace as a Melting Tool (96-69) .. 805
- Application of Intelligent Techniques for Green Sand Control (96-115) 1003
- Applications of AFS/DoE Cupola Model (AFS Research) (96-202) 1223
- Approach to Fatigue Design for Aluminum Castings, An (96-20) ... 445
- Assessing Dimensional Repeatability of Metalcasting Processes (AFS Research) (96-224) 181

B

- Ballistic Evaluation, Part I: Ten Different Cast Iron Materials (96-65) 33
- Ballistic Evaluation, Part II: Austempered Malleable and Austempered Ductile Irons (96-66) 41
- Beneficial Effects of Strontium on A380 Alloy (96-170) 1189
- Beneficial Reuse of Desulfurization Slag (96-64) 29

C

- Carbon Pickup in Steel: A Study of Various Nobake Binders and Sand Additives (96-194) 461
- Cast Iron Penetration in Sand Molds, Part I: Physics of Penetration Defects and Penetration Model (AFS Research) (96-206) 1233
- Cast Iron Penetration in Sand Molds, Part II: Experimental Evaluation of Some Main Parameters Responsible for Penetration (AFS Research) (96-207) 1249
- Cast Iron Penetration in Sand Molds, Part III: Measurement of Mold-Metal Interfacial Gas Composition (AFS Research) (96-208) 1259
- Cast Irons—The Glorious Past and Perilous Future (Honorary Lecture, Div. 5) (96-02) 677
- Casting Characteristics of Aluminum Alloy, Fly Ash Composites (96-166) 1097
- Casting Emissions Reduction Program (CERP) (96-99) 539
- Casting Information Management (96-13) 217
- Centrifugal Casting of Lead-Free Copper-Graphite Alloys (96-190) 1217

- Chemical Reactions of Liquid Metal in Slag Layer and Well of Cupola, Part I: Development of Kinetic Model (96-34) 595
- Chemical Reactions of Liquid Metal in Slag Layer and Well of Cupola, Part II: Prediction of Metal Composition (96-35) 605
- Chill Measurement by Thermal Analysis (96-127) 969
- Company Culture of TQM (96-12) 211
- Contribution to Melting of Cast Iron in Cokeless, Natural Gas-Fired Cupola Furnace (96-40) 693
- Converting Steel and Gray Iron to Ductile Iron (96-71) 51
- Cooperative Research and Development in the European Foundry Industry (96-233) 1265
- Corrosion Behavior of Sand-Cast Red Brass Containing Bi and Se (AFS Research) (96-199) 467
- Counteracting the Effect of Steel Scrap Residuals in Ductile Iron Castings (96-144) 123

D

- Decomposition of High-Carbon Austenite in ADI (96-148) 133
- Defects in Ductile Iron Castings (96-134) 89
- Detecting Chilling Tendency in Series-Manufactured Cast Iron Components Using Micromagnetic Test Procedures (96-149) 1031
- Development and Practice of Three-Dimensional Solidification Simulation Software (96-197) 435
- Development of Gas-Swirling Method for Inerting Metals in Melting Furnaces (96-107) 859
- Development of Neural Network Methodology to Predict TTT Diagrams (96-08) 191
- Development of Thin-Wall Stainless Steel Castings Using Countergravity Process for Automobile Applications (96-82) 903
- Dimensional Change in Austempered Ductile Iron (96-147) 577

E

- Economic Analysis of Iron Melting Technologies—Computer Spreadsheet Models (96-32) 589
- Effect of Alloy Composition and Inoculation on Microstructure and Cracking Susceptibility of Aluminum Cast Irons (96-76) 67
- Effect of Alloying Elements on Properties of 16Cr Ferritic Heat-Resistant Cast Steel (96-87) 245
- Effect of Austempering on Wear Properties of Boron Cast Iron (96-141) 109
- Effect of Continuous Mixing on Viscosity and Permeability of an Iron Lost Foam Coating: A Joint Study (96-123) 329

Effect of Metal Filtration on ASTM Test Bars (96-145)	1017
Effect of Mg Content of Spheroidizer on Chilling Tendency of SG Melt (96-130)	75
Effect of Modification Treatment on Microporosity Formation in 356 Al Alloy, Part I: Interdendritic Feeding Evaluation (96-160)	1151
Effect of Process Variables on Surface Finish and Soundness of Al-11%Si Alloy V-Process Castings (96-159)	1143
Effect of Rising Design on Fluid Flow and Solidification Patterns During Casting Solidification (96-177)	371
Effect of Viscosity on Fluid Flow in Gating Systems (96-56)	11
Effects of Bi and Sb on Graphite Structure of Heavy-Section Ductile Cast Irons (96-70)	845
Effects of Coating Thickness and Pouring Temperature on Thermal Response in Lost Foam Casting (96-93)	281
Effects of Cooling Rate and C and V Contents on DAS and Eutectic Carbide Morphology of As-Cast M2 High-Speed Steel (96-83)	907
Effects of Mg, Ce, Ca, S and La on Graphite Stability in DI During Extended Holding (96-52)	497
Effects of Silicon Content, Coating Materials and Gating Design on Casting Defects in the Aluminum Lost Foam Process (AFS Research) (96-92)	271
Electrical Shock Hazards as Applied to Induction Furnace Systems (96-37)	615
Elevated Temperature Microstructural Stability of Austempered Ductile Irons (96-136)	985
Evaluation of a High-Performance Urethane Coldbox Binder: A Case Study (96-118)	937
Experimental and Simulation Study on Mold Filling with Various Gating Systems (96-179)	155

F

Factors Affecting Drying Conditions of Coatings Sprayed on Permanent Molds (96-23)	769
Factors Controlling the Type and Morphology of Cu-Containing Phases in 319 Al Alloy (96-30)	893
Fatigue Crack Growth and Fracture Behavior of Al-12 Wt% Si-0.35 Wt% Mg (0-0.02) Wt% Sr Casting Alloys (96-27)	785
Feeding Behavior of Modified and Unmodified Al-Si Alloys (96-19)	743
Feeding Efficiency Criteria for Porosity Formation in A356 Alloy Sand Plate Castings (96-16)	545
Filling Phenomena and Accumulated Air Pressure in Mold Cavity of Top-Gated Systems (96-55)	627
Formal Quality Systems in the Pattern Shop (96-126)	347
Formation and Progression of Erosion Surface in Spheroidal Graphite Cast Iron (96-61)	511
Further Evaluation of Wear Analysis of Selected Tooling Materials Using Impact Abrasion Testing (96-105)	317
Future of ISO 9000-Based Standards (96-183)	167
Future Trends in Molding Techniques for High-Production Foundries (96-121)	957

G

Gravity Permanent Mold Casting of Graphite-Dispersed Copper-Base Alloys (96-192)	415
---	-----

H

Heat Treatment of a Squeeze-Infiltrated, Fiber-Reinforced Al Alloy MMC (96-164)	1171
High-Integrity Aluminum Casting in Flaskless Molds Made of Green Sand and Magnetite Ore (96-111)	873
Hot Tearing of Metals (96-155)	1053
Hypereutectic Al-Si Casting Alloys: 25 Years, What's Next? (Silver Anniversary Paper, Div. 2) (96-18)	669

I

Improving Iron Control Through Automated Ladle Additions (96-137)	97
Improving Quality of Iron and Steel Castings Made by Impact Molding Method (96-44)	709
Improvements on Solidification Modeling for A356.2 Aluminum Alloy (96-180)	1203
Incorporating Permeability Into Lost Foam Coating Controls (96-96)	565
Induction Melting: Moving into the 21st Century (96-67)	797
Influence of Mold Coating on Heat Transport in Permanent Mold Casting Process (96-90)	251
Information Engineering Approach to Interpreting ISO 9000 Requirements to Foundry Operations (96-174)	147
Initiation and Propagation of Microcracks in White Cast Irons Under Static Indentation Test (96-06)	729
Investigation and Recommendation for Improvement of Mechanical Properties in Al-Cu-Ni-Zr Alloy (AA203.2) (96-168)	1183
Investigation of Tensile Fracture Process of Al Casting Alloys 354 and 355 (96-25)	887
ISO 14001: The International Standard for Environmental Management Systems (96-122)	325

K

Knowledge-Based System for Casting Process Selection (96-175) ...	363
---	-----

L

Larger-Scale Cold Crucible Melting of Titanium and Its Alloys (96-68)	523
Literature Review for Tenacious Coatings for Aluminum Permanent Mold Casting Process (AFS Research) (96-162)	1079
Lost Foam Casting—Process Control for Precision (96-124)	335

M

Machinability of Cast Lead-Free Yellow Brass Containing Graphite Particles (96-29)	225
Mechanical Properties and Machinability of Si-Solution-Hardened Ferritic Ductile Iron (96-150)	139
Melt Oxidation Behavior and Inclusion Content in Unmodified and Sr-Modified A356 Alloy— Their Role in Pore Nucleation (96-22)	763
Metacasting Benchmarking (96-186)	1209
Methyl Formate Recovery in Ester-Cured Phenolic Coldbox Process, Using Membrane Technology (96-116)	923
Mold-Filling Analysis for Ductile Iron Lost Foam Castings (96-125)	451

Mold-Filling Simulation with Partial-Cell Method (96-10)	197
Mold Wash Quality Control (96-48)	551
Molding Properties of the Air-Flow Press Molding Process (96-42)	699
Molten Metal Flow Rates Through Refractory Cloth Filters (96-74)	57
More Productive Phenolic Urethane Coldbox Process, A (96-119) ..	945
Movements of Vaporization Interface and Temperature Distributions in Green Sand Molds (96-45)	481

N

New Foundry Binder Technologies: A Review of Environmental and Productivity Improvements (96-117)	929
New In-the-Mold Inoculation Process for the Production of Gray and Ductile Iron (96-54)	5
Nonmetallic Inclusions in Steel Castings— A Case Study in Quality Engineering (96-195)	171
Nontoxic, Recyclable, Core Sand Binder for Aluminum Castings (96-189)	1213
Numerical Modeling of Casting Solidification: The Concept of Problem Linearization (96-11)	203
Numerical Simulation of Circulation Flow of Granular Materials During Vertical Vibration (96-51)	619

O

Operations Technology for Demand Flow (96-94)	291
Optimization of Al Casting Productivity Using Foam Filter Technology and Application (96-157)	1063
Optimization of Austenitizing Treatment of Austempered Ductile Irons (96-72)	557
Optimization of Damping Capacity and Strength in Hypereutectic Gray Cast Iron (96-138)	995
Optimization of Low-Pressure Diecasting Process (96-169)	1111
Optimized Recursive Foundry Tooling Fabrication Method (96-106)	815

P

Performance Report on Smartpour: Case Studies (96-09)	439
Permanent Mold Casting of High-Conductivity Copper (96-191)	405
Perspective of China's Foundry in Next Decade (96-102)	297
PoDFA Measurement of Inclusions in 319.1 Alloy: Effect of Mg (0.45 Wt%) Addition and Role of Sludge (96-21) ..	751
Pollution Prevention—The Options (96-101)	917
Predicting Gray Cast Iron Properties With Artificial Neural Network (96-57)	635
Pressed Cellular Filter Application in an Aluminum Foundry (96-154)	1045
Price Response Service: An Opportunity for the Foundry Industry (96-178)	379
Processing and Evaluation of Investment Cast Magnesium-Base Alloy (96-80)	237
Processing Foundry Sands at John Deere: Turning Waste Management into Asset Management (96-50)	717
Producing Tomorrow's Molds With Abraded Electrodes and EDM (96-103)	303
Production and Evaluation of Squeeze-Cast Zinc-Aluminum (ZA) Alloys (96-163)	1159

Production of Weldable Al Diecastings— Requirements and Casting Technology (96-171)	1195
Properties of Sodium Silicate-Bonded Molding Sands With L-D Converter Slag Powder (96-112)	571
Proposal of Site Theory (96-131)	79

Q

9000 Implementation and Audit Case Study (96-172)	351
Quality and the Development of Reference Materials, Including the Role of Traceability and Comparability (96-201)	475
Quantitative Characterization of Graphite in Gray Iron (AFS Research) (96-129)	977

R

Rapid Induction Melting Lost Crucible (RIMLOC) Process (96-108)	321
Reaction Gases of Heated Green Sand Molds (96-46)	825
Recent Advances in Nondestructive Testing of Iron Castings (96-143)	115
Review of Reliable Processes for Aluminum Aerospace Castings (96-158)	1069
Role of Casting Technology in the Transportation Industry (Hoyt Memorial Lecture) (96-245)	673

S

Science Behind Batch Induction Melting, The (96-41)	229
Secondary Nucleation of Eutectic Graphite Grains (96-14)	1
Service Modulus: A Method for Accurate Determination of Young's Modulus and Yield Strength in Ductile Iron (96-53) ...	721
Short History of the Steel Foundry, A (96-89)	643
Silicon Recovery, Silicon Charged, Silicon Oxidation and Slag Silica Analyses in Acid Cupola Melting (96-39)	683
Simulation of a Foundry Sand System (96-114)	821
Simulation of Metal Distribution Process in an Automated Pipe Shop (96-184)	385
Simulation of Microstructure Evolution During Solidification of Inconel 718 (96-193)	425
Simulation vs. Reality of an Industrial Ductile Iron Casting (96-185)	659
S-Inoculation of Mg-Treated Cast Iron to Obtain CG Cast Iron and Improve Graphite Nucleation in DI (96-151)	581
So You Want to Pour Ductile Iron (96-244)	1275
Solidification Conditions, Heat Treatment and Tensile Ductility of Al-7Si-0.4Mg Casting Alloys (96-153)	1039
Solidification of Multi-Alloyed White Cast Iron: Type and Morphology of Carbides (96-140)	103
Solidification Process Modeling of Chills in LFC of A356 Alloy: Preliminary Study (96-156)	1133
Solidification Structure of Al-Si Strip by Unequal Diameter Twin-Roller Strip Casting Process (96-17)	735
Solution Heat Treatment of 354 and 355 Cast Alloys (96-26)	777
Solution-Treatment Conditions for Optimal Tensile Properties in A357 Alloy (96-152)	1119
Statistically-Based Pattern Approval Process (96-104)	307
Study of Cohesive Flow in Fluidized Foundry Sands (96-43)	705
Study of Foundry Granular Media and Its Attrition (96-113)	877

Study on the Metallurgical Quality of Disk Brake Rotors, A (96-58)	19
Survey of State Environmental Regulations Impacting Beneficial Reuse of Foundry Residuals (96-95)	527

T

Thermodynamic Equilibrium of Lead and Iron With Triple Superphosphate (96-97)	651
Thixocasting and Low-Pressure/Counter-Pressure Diecasting: Processes for Production of High-Quality Casting of Al-Alloys (96-167)	1103
Titanium Effect on Structure and Properties of Gray Iron Permanent Mold Castings (96-142)	1011
TQM and the Office Staff (96-173)	355

Transport of Foam Decomposition Products into the Sand in the Lost Foam Casting Process (AFS Research) (96-91)	263
Twenty-Five Years of Green Sand Control (Silver Anniversary Paper, Div. 4) (96-239)	1269
Two-Year Campaign for a Better Work Environment (96-100)	809

U

Using Rapid Modeling Technology in a Permanent Mold Casting Production Facility (96-188)	395
---	-----

W

Welding and Brazing Characteristics of Austempered Ductile Irons (96-62)	717
---	-----

Paper Number Index

96-02	Cast Irons—The Glorious Past and Perilous Future (Honorary Lecture, Div. 5)	677	96-39	Silicon Recovery, Silicon Charged, Silicon Oxidation and Slag Silica Analyses in Acid Cupola Melting	683
96-06	Initiation and Propagation of Microcracks in White Cast Irons Under Static Indentation Test	729	96-40	Contribution to Melting of Cast Iron in Cokeless, Natural Gas-Fired Cupola Furnace	693
96-08	Development of Neural Network Methodology to Predict TTT Diagrams	191	96-41	The Science Behind Batch Induction Melting	229
96-09	Performance Report on Smartpour: Case Studies	439	96-42	Molding Properties of the Air-Flow Press Molding Process	699
96-10	Mold-Filling Simulation with Partial-Cell Method	197	96-43	Study of Cohesive Flow in Fluidized Foundry Sands	705
96-11	Numerical Modeling of Casting Solidification: The Concept of Problem Linearization	203	96-44	Improving Quality of Iron and Steel Castings Made by Impact Molding Method	709
96-12	Company Culture of TQM	211	96-45	Movements of Vaporization Interface and Temperature Distributions in Green Sand Molds	481
96-13	Casting Information Management	217	96-46	Reaction Gases of Heated Green Sand Molds	825
96-14	Secondary Nucleation of Eutectic Graphite Grains	1	96-47	Application of FEM to Predict Hardness Distribution of Air-Impact, Compacted Green Sand Molds	491
96-16	Feeding Efficiency Criteria for Porosity Formation in A356 Alloy Sand Plate Castings	545	96-48	Mold Wash Quality Control	551
96-17	Solidification Structure of Al-Si Strip by Unequal Diameter Twin-Roller Strip Casting Process	735	96-49	Application of a Hotbox Sodium Silicate Binder to the Foundry Industry	837
96-18	Hypereutectic Al-Si Casting Alloys: 25 Years, What's Next? (Silver Anniversary Paper, Div. 2)	669	96-50	Processing Foundry Sands at John Deere: Turning Waste Management into Asset Management	717
96-19	Feeding Behavior of Modified and Unmodified Al-Si Alloys	743	96-51	Numerical Simulation of Circulation Flow of Granular Materials During Vertical Vibration	619
96-20	An Approach to Fatigue Design for Aluminum Castings ...	445	96-52	Effects of Mg, Ce, Ca, S and La on Graphite Stability in DI During Extended Holding	497
96-21	PoDFA Measurement of Inclusions in 319.1 Alloy: Effect of Mg (0.45 Wt%) Addition and Role of Sludge	751	96-53	Service Modulus: A Method for Accurate Determination of Young's Modulus and Yield Strength in Ductile Iron	721
96-22	Melt Oxidation Behavior and Inclusion Content in Unmodified and Sr-Modified A356 Alloy—Their Role in Pore Nucleation	763	96-54	New In-the-Mold Inoculation Process for the Production of Gray and Ductile Iron	5
96-23	Factors Affecting Drying Conditions of Coatings Sprayed on Permanent Molds	769	96-55	Filling Phenomena and Accumulated Air Pressure in Mold Cavity of Top-Gated Systems	627
96-25	Investigation of Tensile Fracture Process of Al Casting Alloys 354 and 355	887	96-56	Effect of Viscosity on Fluid Flow in Gating Systems	11
96-26	Solution Heat Treatment of 354 and 355 Cast Alloys	777	96-57	Predicting Gray Cast Iron Properties With Artificial Neural Network	635
96-27	Fatigue Crack Growth and Fracture Behavior of Al-12 Wt% Si-0.35 Wt% Mg (0-0.02) Wt% Sr Casting Alloys	785	96-58	A Study on the Metallurgical Quality of Disk Brake Rotors	19
96-29	Machinability of Cast Lead-Free Yellow Brass Containing Graphite Particles	225	96-61	Formation and Progression of Erosion Surface in Spheroidal Graphite Cast Iron	511
96-30	Factors Controlling the Type and Morphology of Cu-Containing Phases in 319 Al Alloy	893	96-62	Welding and Brazing Characteristics of Austempered Ductile Irons	517
96-32	Economic Analysis of Iron Melting Technologies—Computer Spreadsheet Models	589	96-64	Beneficial Reuse of Desulfurization Slag	29
96-34	Chemical Reactions of Liquid Metal in Slag Layer and Well of Cupola, Part I: Development of Kinetic Model	595	96-65	Ballistic Evaluation, Part I: Ten Different Cast Iron Materials	33
96-35	Chemical Reactions of Liquid Metal in Slag Layer and Well of Cupola, Part II: Prediction of Metal Composition	605	96-66	Ballistic Evaluation, Part II: Austempered Malleable and Austempered Ductile Irons	41
96-37	Electrical Shock Hazards as Applied to Induction Furnace Systems	615	96-67	Induction Melting: Moving into the 21st Century	797
			96-68	Larger-Scale Cold Crucible Melting of Titanium and Its Alloys	523
			96-69	Application of Induction Ladle Furnace as a Melting Tool	805

96-70	Effects of Bi and Sb on Graphite Structure of Heavy-Section Ductile Cast Irons	845	96-116	Methyl Formate Recovery in Ester-Cured Phenolic Coldbox Process, Using Membrane Technology	923
96-71	Converting Steel and Gray Iron to Ductile Iron	51	96-117	New Foundry Binder Technologies: A Review of Environmental and Productivity Improvements	929
96-72	Optimization of Austenitizing Treatment of Austempered Ductile Irons	557	96-118	Evaluation of a High-Performance Urethane Coldbox Binder: A Case Study	937
96-74	Molten Metal Flow Rates Through Refractory Cloth Filters	57	96-119	A More Productive Phenolic Urethane Coldbox Process	945
96-76	Effect of Alloy Composition and Inoculation on Microstructure and Cracking Susceptibility of Aluminum Cast Irons	67	96-120	Air Flow Variations Within a Corebox: A Study of Vent Open Area and Sand Variables	951
96-80	Processing and Evaluation of Investment Cast Magnesium-Base Alloy	237	96-121	Future Trends in Molding Techniques for High-Production Foundries	957
96-82	Development of Thin-Wall Stainless Steel Castings Using Countergravity Process for Automobile Applications	903	96-122	ISO 14001: The International Standard for Environmental Management Systems	325
96-83	Effects of Cooling Rate and C and V Contents on DAS and Eutectic Carbide Morphology of As-Cast M2 High-Speed Steel	907	96-123	Effect of Continuous Mixing on Viscosity and Permeability of an Iron Lost Foam Coating: A Joint Study	329
96-87	Effect of Alloying Elements on Properties of 16Cr Ferritic Heat-Resistant Cast Steel	245	96-124	Lost Foam Casting—Process Control for Precision	335
96-89	A Short History of the Steel Foundry	643	96-125	Mold-Filling Analysis for Ductile Iron Lost Foam Castings	451
96-90	Influence of Mold Coating on Heat Transport in Permanent Mold Casting Process	251	96-126	Formal Quality Systems in the Pattern Shop	347
96-91	Transport of Foam Decomposition Products into the Sand in the Lost Foam Casting Process (AFS Research)	263	96-127	Chill Measurement by Thermal Analysis	969
96-92	Effects of Silicon Content, Coating Materials and Gating Design on Casting Defects in the Aluminum Lost Foam Process (AFS Research)	271	96-129	Quantitative Characterization of Graphite in Gray Iron (AFS Research)	977
96-93	Effects of Coating Thickness and Pouring Temperature on Thermal Response in Lost Foam Casting	281	96-130	Effect of Mg Content of Spheroidizer on Chilling Tendency of SG Melt	75
96-94	Operations Technology for Demand Flow	291	96-131	Proposal of Site Theory	79
96-95	Survey of State Environmental Regulations Impacting Beneficial Reuse of Foundry Residuals	527	96-134	Defects in Ductile Iron Castings	89
96-96	Incorporating Permeability Into Lost Foam Coating Controls	565	96-136	Elevated Temperature Microstructural Stability of Austempered Ductile Irons	985
96-97	Thermodynamic Equilibrium of Lead and Iron With Triple Superphosphate	651	96-137	Improving Iron Control Through Automated Ladle Additions	97
96-99	Casting Emissions Reduction Program (CERP)	539	96-138	Optimization of Damping Capacity and Strength in Hypereutectic Gray Cast Iron	995
96-100	Two-Year Campaign for a Better Work Environment	809	96-140	Solidification of Multi-Alloyed White Cast Iron: Type and Morphology of Carbides	103
96-101	Pollution Prevention—The Options	917	96-141	Effect of Austempering on Wear Properties of Boron Cast Iron	109
96-102	Perspective of China's Foundry in Next Decade	297	96-142	Titanium Effect on Structure and Properties of Gray Iron Permanent Mold Castings	1011
96-103	Producing Tomorrow's Molds With Abraded Electrodes and EDM	303	96-143	Recent Advances in Nondestructive Testing of Iron Castings	115
96-104	Statistically-Based Pattern Approval Process	307	96-144	Counteracting the Effect of Steel Scrap Residuals in Ductile Iron Castings	123
96-105	Further Evaluation of Wear Analysis of Selected Tooling Materials Using Impact Abrasion Testing	317	96-145	Effect of Metal Filtration on ASTM Test Bars	1017
96-106	Optimized Recursive Foundry Tooling Fabrication Method	815	96-147	Dimensional Change in Austempered Ductile Iron	577
96-107	Development of Gas-Swirling Method for Inerting Metals in Melting Furnaces	859	96-148	Decomposition of High-Carbon Austenite in ADI	133
96-108	Rapid Induction Melting Lost Crucible (RIMLOC) Process	321	96-149	Detecting Chilling Tendency in Series-Manufactured Cast Iron Components Using Micromagnetic Test Procedures	1031
96-110	Analytical Pyrolysis for Detection of Benzene Potential in Sand-System Coals	865	96-150	Mechanical Properties and Machinability of Si-Solution-Hardened Ferritic Ductile Iron	139
96-111	High-Integrity Aluminum Casting in Flaskless Molds Made of Green Sand and Magnetite Ore	873	96-151	Inoculation of Mg-Treated Cast Iron to Obtain CG Cast Iron and Improve Graphite Nucleation in DI	581
96-112	Properties of Sodium Silicate-Bonded Molding Sands With L-D Converter Slag Powder	571	96-152	Solution-Treatment Conditions for Optimal Tensile Properties in A357 Alloy	1119
96-113	Study of Foundry Granular Media and Its Attrition	877	96-153	Solidification Conditions, Heat Treatment and Tensile Ductility of Al-7Si-0.4Mg Casting Alloys	1039
96-114	Simulation of a Foundry Sand System	821	96-154	Pressed Cellular Filter Application in an Aluminum Foundry	1045
96-115	Application of Intelligent Techniques for Green Sand Control	1003	96-155	Hot Tearing of Metals	1053
			96-156	Solidification Process Modeling of Chills in LFC of A356 Alloy: Preliminary Study	1133

96-157	Optimization of Al Casting Productivity Using Foam Filter Technology and Application	1063	96-185	Simulation vs. Reality of an Industrial Ductile Iron Casting	659
96-158	Review of Reliable Processes for Aluminum Aerospace Castings	1069	96-186	Metalcasting Benchmarking	1209
96-159	Effect of Process Variables on Surface Finish and Soundness of Al-11%Si Alloy V-Process Castings	1143	96-188	Using Rapid Modeling Technology in a Permanent Mold Casting Production Facility	395
96-160	Effect of Modification Treatment on Microporosity Formation in 356 Al Alloy, Part I: Interdendritic Feeding Evaluation	1151	96-189	Nontoxic, Recyclable, Core Sand Binder for Aluminum Castings	1213
96-162	Literature Review for Tenacious Coatings for Aluminum Permanent Mold Casting Process (AFS Research)	1079	96-190	Centrifugal Casting of Lead-Free Copper-Graphite Alloys	1217
96-163	Production and Evaluation of Squeeze-Cast Zinc-Aluminum (ZA) Alloys	1159	96-191	Permanent Mold Casting of High-Conductivity Copper	405
96-164	Heat Treatment of a Squeeze-Infiltrated, Fiber-Reinforced Al Alloy MMC	1171	96-192	Gravity Permanent Mold Casting of Graphite-Dispersed Copper-Base Alloys	415
96-165	Al-7Si-0.3Mg Cast Alloy: A New Approach to Property Improvement	1175	96-193	Simulation of Microstructure Evolution During Solidification of Inconel 718	425
96-166	Casting Characteristics of Aluminum Alloy, Fly Ash Composites	1079	96-194	Carbon Pickup in Steel: A Study of Various Nobake Binders and Sand Additives	461
96-167	Thixocasting and Low-Pressure/Counter-Pressure Diecasting: Processes for Production of High-Quality Casting of Al-Alloys	1103	96-195	Nonmetallic Inclusions in Steel Castings—A Case Study in Quality Engineering	171
96-168	Investigation and Recommendation for Improvement of Mechanical Properties in Al-Cu-Ni-Zr Alloy (AA203.2)	1183	96-197	Development and Practice of Three-Dimensional Solidification Simulation Software	435
96-169	Optimization of Low-Pressure Diecasting Process	1111	96-199	Corrosion Behavior of Sand-Cast Red Brass Containing Bi and Se (AFS Research)	467
96-170	Beneficial Effects of Strontium on A380 Alloy	1189	96-201	Quality and the Development of Reference Materials, Including the Role of Traceability and Comparability	475
96-171	Production of Weldable Al Diecastings—Requirements and Casting Technology	1195	96-202	Applications of AFS/DoE Cupola Model (AFS Research)	1223
96-172	QS 9000 Implementation and Audit Case Study	351	96-206	Cast Iron Penetration in Sand Molds, Part I: Physics of Penetration Defects and Penetration Model (AFS Research)	1233
96-173	TQM and the Office Staff	355	96-207	Cast Iron Penetration in Sand Molds, Part II: Experimental Evaluation of Some Main Parameters Responsible for Penetration (AFS Research)	1249
96-174	Information Engineering Approach to Interpreting ISO 9000 Requirements to Foundry Operations	147	96-208	Cast Iron Penetration in Sand Molds, Part III: Measurement of Mold-Metal Interfacial Gas Composition (AFS Research)	1259
96-175	Knowledge-Based System for Casting Process Selection ...	363	96-224	Assessing Dimensional Repeatability of Metalcasting Processes (AFS Research)	181
96-177	Effect of Riser Design on Fluid Flow and Solidification Patterns During Casting Solidification	371	96-233	Cooperative Research and Development in the European Foundry Industry	1265
96-178	Price Response Service: An Opportunity for the Foundry Industry	379	96-239	Twenty-Five Years of Green Sand Control (Silver Anniversary Paper, Div. 4)	1269
96-179	Experimental and Simulation Study on Mold Filling with Various Gating Systems	155	96-244	So You Want to Pour Ductile Iron	1275
96-180	Improvements on Solidification Modeling for A356.2 Aluminum Alloy	1203	96-245	Role of Casting Technology in the Transportation Industry (Hoyt Memorial Lecture)	673
96-183	Future of ISO 9000-Based Standards	167			
96-184	Simulation of Metal Distribution Process in an Automated Pipe Shop	385			



Division Index

Note: Paper numbers followed by an asterisk indicate that there is a question or comment in the Discussion section. An example can be seen in the first entry, page 217.

ENGINEERING, DIV. 1

Casting Information Management (96-13)*—	
B. Ravi, M.M. Akarte	217
Company Culture of TQM (96-12)—T.J. Schorn	211
Development and Practice of Three-Dimensional Solidification Simulation Software (96-197)—	
C. Jun, X. Xiaozhong, X. Hong	435
Effect of Rising Design on Fluid Flow and Solidification Patterns During Casting Solidification (96-177)—J.H. Chen, H.L. Tsai	371
Experimental and Simulation Study on Mold Filling With Various Gating Systems (96-179)*—	
Z.A. Xu, F. Mampaey	155
Future of ISO 9000-Based Standards (96-183)—	
D. Scrimshire	167
Improvements on Solidification Modeling for A356.2 Aluminum Alloy (96-180)—	
Y.-F. Chen, W.-S. Hwang	1203
Influence of Mold Coating on Heat Transport in Permanent Mold Casting Process (96-90)—	
S. Wei, J. Dillingham, M.R. Jiranek, K. Nyamekye, C.W. Ramsay, D.R. Askeland, R. Pischel	251
Information Engineering Approach to Interpreting ISO 9000 Requirements to Foundry Operations (96-174)—	
G.P. Moynihan, R.G. Batson, D. Datta, W.G. Nichols	147
Knowledge-Based System for Casting Process Selection (96-175)*—A. Er, E.T. Sweeney, V. Kondic	363
Metalcasting Benchmarking (96-186)—	
K.R. Spangler, N. Rammohan, R. Atluri, R.C. Creese	1209
Mold-Filling Simulation with Partial-Cell Method (96-10)—Y.-F. Chen, W.-S. Hwang	197
Numerical Modeling of Casting Solidification: The Concept of Problem Linearization (96-11)*—	
B. Mochnecki, J.S. Suchy	203
QS 9000 Implementation and Audit Case Study (96-172)*—S. Ebert	351
Secondary Nucleation of Eutectic Graphite Grains (96-14)—	
E. Fras, W. Kapturkiewicz, A.A. Burbielko, H.F. Lopez	1
Simulation of Metal Distribution Process in an Automated Pipe Shop (96-184)—M. Reddy, R.G. Batson	385
Simulation of Microstructure Evolution During Solidification of Inconel 718 (96-193)—	
L. Nastac, D.M. Stefanescu	425
Simulation vs. Reality of an Industrial Ductile Iron Casting (96-185)*—R. Aagard, J. Hattel, W. Schäfer, I.L. Svensson, P.N. Hansen	659

TQM and the Office Staff (96-173)—C.W. Roemer, Jr.	355
Using Rapid Modeling Technology in a Permanent Mold Casting Production Facility (96-188)—K. Nyamekye, Y.-K. An	395

ALUMINUM, DIV. 2

Al-7Si-0.3Mg Cast Alloy: A New Approach to Property Improvement (96-165)*—	
S. Murali, K.S. Raman, K.S.S. Murthy	1175
An Approach to Fatigue Design for Aluminum Castings (96-20)—D.L. McLellan, M.M. McLellan	445
Beneficial Effects of Strontium on A380 Alloy (96-170)*—	
B. Kulunk, S.G. Shabestari, J.E. Gruzleski, D.J. Zuliani	1189
Casting Characteristics of Aluminum Alloy, Fly Ash Composites (96-166)*—R.Q. Guo, P.K. Rohatgi, S. Ray	1097
Effect of Modification Treatment on Microporosity Formation in 356 Al Alloy, Part I: Interdendritic Feeding Evaluation (96-160)*—	
R. Fuoco, E.R. Correa, H. Goldenstein	1151
Effect of Process Variables on Surface Finish and Soundness of Al-11%Si Alloy V-Process Castings (96-159)—P. Kumar, J.L. Gaidhar	1143
Factors Affecting Drying Conditions of Coatings Sprayed on Permanent Molds (96-23)—F. Chiesa, A. Boisvert	769
Factors Controlling the Type and Morphology of Cu-Containing Phases in 319 Al Alloy (96-30)—	
F.H. Samuel, A.M. Samuel, H.W. Doty	893
Fatigue Crack Growth and Fracture Behavior of Al-12 Wt% Si-0.35 Wt% Mg (0-0.02) Wt% Sr Casting Alloys (96-27)—F.T. Lee, J.F. Major, F.H. Samuel	785
Feeding Behavior of Modified and Unmodified Al-Si Alloys (96-19)—J.M. Kim, H.W. Kwon, C.R. Loper, Jr.	743
Feeding Efficiency Criteria for Porosity Formation in A356 Alloy Sand Plate Castings (96-16)—S.-T. Kao, E. Chang	545
Heat Treatment of a Squeeze-Infiltrated, Fiber-Reinforced Al Alloy MMC (96-164)—F. Azar, C.S. Lim, A.J. Clegg	1171
Hot Tearing of Metals (96-155)—G.K. Sigworth	1053
Hoyt Memorial Lecture	
Role of Casting Technology in the Transportation Industry (96-245)—P.R. Bridenbaugh	673
Investigation and Recommendation for Improvement of Mechanical Properties in Al-Cu-Ni-Zr Alloy (AA203.2) (96-168)—N.S. Mahesh, M.K. Muralidhara, V. Gopalakrishna, T.N. Saran	1183
Investigation of Tensile Fracture Process of Al Casting Alloys 354 and 355 (96-25)—R. Li	887
Literature Review for Tenacious Coatings for Aluminum Permanent Mold Casting Process (AFS Research) (96-162)—	
J. Dillingham, C.W. Ramsay, D.R. Askeland	1079

Melt Oxidation Behavior and Inclusion Content in Unmodified and Sr-Modified A356 Alloy—Their Role in Pore Nucleation (96-22)*—D. Emadi, J.E. Gruzleski, M. Pekguleryuz	763
Optimization of Al Casting Productivity Using Foam Filter Technology and Application (96-157)*—P. Sandford, S.R. Sibley	1063
Optimization of Low-Pressure Diecasting Process (96-169)—W. Müller, F.J. Feikus	1111
PoDFA Measurement of Inclusions in 319.1 Alloy: Effect of Mg (0.45 Wt%) Addition and Role of Sludge (96-21)—H. de la Sablonniere, F.H. Samuel	751
Pressed Cellular Filter Application in an Aluminum Foundry (96-154)*—V.W. Wang, G.J. Mako, A.L. Matthews	1045
Production and Evaluation of Squeeze-Cast Zinc-Aluminum (ZA) Alloys (96-163)—J. Begg, A.J. Clegg	1159
Production of Weldable Al Diecastings—Requirements and Casting Technology (96-171)—H. Wohlfahrt, J. Ruge, D.-H. Rehbein	1195
Review of Reliable Processes for Aluminum Aerospace Castings (96-158)—M. Tiryakioğlu, J. Campbell, N.R. Green	1069
Silver Anniversary Paper, Div. 2	
Hypereutectic Al-Si Casting Alloys: 25 Years, What's Next? (96-18)*—J.L. Jorstad	669
Solidification Conditions, Heat Treatment and Tensile Ductility of Al-7Si-0.4Mg Casting Alloys (96-153)—C.H. Caceres, Q.G. Wang	1039
Solidification Process Modeling of Chills in LFC of A356 Alloy: Preliminary Study (96-156)—R. Simpson, C. Ravindran	1133
Solidification Structure of Al-Si Strip by Unequal Diameter Twin-Roller Strip Casting Process (96-17)—S.L. Kuan, T.S. Lui, L.H. Chen	735
Solution Heat Treatment of 354 and 355 Cast Alloys (96-26)—R. Li	777
Solution-Treatment Conditions for Optimal Tensile Properties in A357 Alloy (96-152)—E.N. Pan, J.F. Hu, C.C. Fan	1119
Thixocasting and Low-Pressure/Counter-Pressure Diecasting: Processes for Production of High-Quality Casting of Al-Alloys (96-167)*—P.R. Sahm, A. Bührig-Polaczek, M. Achten, T. Zeuner, P. Stojanov	1103

COPPER ALLOY, DIV. 3

Centrifugal Casting of Lead-Free Copper-Graphite Alloys (96-190)*—P.K. Rohatgi, J.K. Kim, J. Sobczak, N. Sobczak, S. Ray	1217
Corrosion Behavior of Sand-Cast Red Brass Containing Bi and Se (AFS Research) (96-199)*—V. Mitrovic-Scepanovic, R. Brigham, M. Sahoo	467
Gravity Permanent Mold Casting of Graphite-Dispersed Copper-Base Alloys (96-192)*—F.A. Fasoyinu, J.L. Dion, D. Cousineau, C. Bibby, M. Sahoo	415
Machinability of Cast Lead-Free Yellow Brass Containing Graphite Particles (96-29)—A. Saigal, P.K. Rohatgi	225
Permanent Mold Casting of High-Conductivity Copper (96-191)*—J.L. Dion, F.A. Fasoyinu, D. Cousineau, C. Bibby, M. Sahoo	405
Quality and the Development of Reference Materials, Including the Role of Traceability and Comparability (96-201)—W.P. Reed	475

MOLDING METHODS & MATERIALS, DIV. 4

A More Productive Phenolic Urethane Coldbox Process (96-119)—P.A. Blackburn, C.M. Henry	945
Air Flow Variations Within a Corebox: A Study of Vent Open Area and Sand Variables (96-120)—D.M. Gilson, K.B. Horton, P.B. Carr	951
Analytical Pyrolysis for Detection of Benzene Potential in Sand-System Coals (96-110)—C.R. Landis	865
Application of a Hotbox Sodium Silicate Binder to the Foundry Industry (96-49)*—V.S. LaFay, S.L. Neltner, T.C. Dempsey, Jr.	837
Application of FEM to Predict Hardness Distribution of Air-Impact, Compacted Green Sand Molds (96-47)—J. Wu, J. Jiang, G. Yang, B. Xie	491
Application of Intelligent Techniques for Green Sand Control (96-115)*—P.F. Bartelt, M.R. Grady, D. Dibble	1003
Cast Iron Penetration in Sand Molds, Part I: Physics of Penetration Defects and Penetration Model (AFS Research) (96-206)—D.M. Stefanescu, S.R. Giese, T.S. Piwonka, A.M. Lane	1233
Cast Iron Penetration in Sand Molds, Part II: Experimental Evaluation of Some Main Parameters Responsible for Penetration (AFS Research) (96-207)—S.R. Giese, D.M. Stefanescu, J. Barlow, T.S. Piwonka	1249
Cast Iron Penetration in Sand Molds, Part III: Measurement of Mold-Metal Interfacial Gas Composition (AFS Research) (96-208)—R. Pattabhi, A.M. Lane, T.S. Piwonka	1259
Evaluation of a High-Performance Urethane Coldbox Binder: A Case Study (96-118)—S.G. Baker, W.R. LaDow, M.M. Geoffrey	937
Future Trends in Molding Techniques for High-Production Foundries (96-121)*—A.D. Busby	957
High-Integrity Aluminum Casting in Flaskless Molds Made of Green Sand and Magnetite Ore (96-111)—P.N. Hansen, N.W. Rasmussen, U. Andersen, M. Andersen	873
Improving Quality of Iron and Steel Castings Made by Impact Molding Method (96-44)—A.J. Shturmakov, M.J. Granlund	709
Methyl Formate Recovery in Ester-Cured Phenolic Coldbox Process, Using Membrane Technology (96-116)—D.L. Winters, M.L. Jacobs, J. Kaschemekat	923
Mold Wash Quality Control (96-48)—W.D. Scott, G.J. Vingas	551
Molding Properties of the Air-Flow Press Molding Process (96-42)—T. Sugiura, K. Hashimoto, M. Naito	699
Movements of Vaporization Interface and Temperature Distributions in Green Sand Molds (96-45)—T.-S. Shih, S.-S. Hsiao, C.-H. Hong	481
New Foundry Binder Technologies: A Review of Environmental and Productivity Improvements (96-117)—R.A. Laitar, M.M. Geoffrey	929
Nontoxic, Recyclable, Core Sand Binder for Aluminum Castings (96-189)—J.-S. Siak, W. Whited, R. Schreck, M. Datte, S. Biederman	1213
Numerical Simulation of Circulation Flow of Granular Materials During Vertical Vibration (96-51)—S. Kuraoka, P.J. Bosscher	619

Processing Foundry Sands at John Deere: Turning Waste Management into Asset Management (96-50)*—H.M. Ulfers, J.W. Highfield	717
Properties of Sodium Silicate-Bonded Molding Sands With L-D Converter Slag Powder (96-112)— J.K. Oh, B.W. Cheon, Y.M. Hong, C.O. Choi	571
Reaction Gases of Heated Green Sand Molds (96-46)—T.-S. Shih, L.-R. Hwang, M.-Y. Hwang	825
Silver Anniversary Paper, Div. 4 Twenty-Five Years of Green Sand Control (96-239)—A.P. Volkmar	1269
Simulation of a Foundry Sand System (96-114)— S. Singh, S.N. Ramrattan, L. Bringelson, S. Ahire	821
Study of Cohesive Flow in Fluidized Foundry Sands (96-43)*—S.I. Bakhtiyarov, R.A. Overfelt	705
Study of Foundry Granular Media and Its Attrition (96-113)—S.N. Ramrattan, P.J. Guichelaar, A. Palukunnu, R. Tieder	877

CAST IRON, DIV. 5

A Study on the Metallurgical Quality of Disk Brake Rotors (96-58)—F. Chiesa, D. Mathieu, M. Brunelle	19
Ballistic Evaluation, Part I: Ten Different Cast Iron Materials (96-65)—P.H. Mani, C. Casad	33
Ballistic Evaluation, Part II: Austempered Malleable and Austempered Ductile Irons (96-66)—P.H. Mani, C. Casad	41
Beneficial Reuse of Desulfurization Slag (96-64)*—C.R. Loper, Jr., J.O. Kristiansen, A.L. Haase, R.H. Bigge, F.A. Quilling, R.S. Krouse, A.K. Chowdhury	29
Chill Measurement by Thermal Analysis (96-127)— D.A. Sparkman, C.A. Bhaskaran	969
Converting Steel and Gray Iron to Ductile Iron (96-71)—L.C. Tandon	51
Counteracting the Effect of Steel Scrap Residuals in Ductile Iron Castings (96-144)—A. Trudel, M. Gagné, F. Lavallée	123
Decomposition of High-Carbon Austenite in ADI (96-148)*—J.M. Massone, R.E. Boeri, J.A. Sikora	133
Defects in Ductile Iron Castings (96-134)— Z.B. Dwyer, R.D. Griffin, C.E. Bates	89
Detecting Chilling Tendency in Series-Manufactured Cast Iron Components Using Micromagnetic Test Procedures (96-149)—I. Altpeter, U. Laub	1031
Dimensional Change in Austempered Ductile Iron (96-147)—O.J. Moncada, J.A. Sikora	577
Effect of Alloy Composition and Inoculation on Microstructure and Cracking Susceptibility of Aluminum Cast Irons (96-76)—S. Ghosh, A. Prodhan, A.K. Chakrabarti, O.N. Mohanty	67
Effect of Austempering on Wear Properties of Boron Cast Iron (96-141)—W. Deqing, H.F. Lopez	109
Effect of Metal Filtration on ASTM Test Bars (96-145)—M.F. Nikolai	1017
Effect of Mg Content of Spheroidizer on Chilling Tendency of SG Melt (96-130)—H. Hagayoshi, K. Imanishi	75
Effect of Viscosity on Fluid Flow in Gating Systems (96-56)—L.-R. Hwang, T.-S. Shih, S.-S. Hsiau	11
Effects of Bi and Sb on Graphite Structure of Heavy-Section Ductile Cast Irons (96-70)—E.N. Pan, C.Y. Chen	845
Effects of Mg, Ce, Ca, S and La on Graphite Stability in DI During Extended Holding (96-52)—M.J. Gross, G. Wistehuff, H. Colthurst, D.R. Askeland	497
Elevated Temperature Microstructural Stability of Austempered Ductile Irons (96-136)—G. Nadkarni, S. Gokhale, J.D. Boyd	985
Filling Phenomena and Accumulated Air Pressure in Mold Cavity of Top- Gated Systems (96-55)—L.-R. Hwang, T.-S. Shih	627
Formation and Progression of Erosion Surface in Spheroidal Graphite Cast Iron (96-61)—K. Shimizu, T. Noguchi, T. Kamada, H. Takasaki ..	511
Honorary Lecture, Div. 5 Cast Irons—The Glorious Past and Perilous Future (96-02)—G.F. Ruff	677
Improving Iron Control Through Automated Ladle Additions (96-137)—H.J. Christensen, D.E. Townsend, J.E. Hughey	97
Initiation and Propagation of Microcracks in White Cast Irons Under Static Indentation Test (96-06)—M. Qian, W. Zhaochang, S. Harada	729
Mechanical Properties and Machinability of Si-Solution-Hardened Ferritic Ductile Iron (96-150)— L.-E. Björkregren, K. Hamberg, B. Johansson	139
Molten Metal Flow Rates Through Refractory Cloth Filters (96-74)*—C.R. Loper, Jr., A. Javadi, J.R. Hitchings	57
New In-the-Mold Inoculation Process for the Production of Gray and Ductile Iron (96-54)—A. Rouam, S. Zerbin	5
Optimization of Austenitizing Treatment of Austempered Ductile Irons (96-72)—T.-S. Shih, S.Y. Chau, C.H. Chang	557
Optimization of Damping Capacity and Strength in Hypereutectic Gray Cast Iron (96-138)*—S.V. Subramanian, A.J. Genualdi	995
Performance Report on Smartpour: Case Studies (96-09)—F.G. Bargh, G.R. Barnes	439
Predicting Gray Cast Iron Properties with Artificial Neural Network (96-57)—R.B. Yao, C.X. Tang, G.X. Sun	635
Proposal of Site Theory (96-131)—H. Itofuji	79
Quantitative Characterization of Graphite in Gray Iron (AFS Research) (96-129)*— R.D. Griffin, P. Scarber, G.M. Janowski, C.E. Bates	977
Recent Advances in Nondestructive Testing of Iron Castings (96-143)—P.J. Rickards, M. Wickins	115
S-Inoculation of Mg-Treated Cast Iron to Obtain CG Cast Iron and Improve Graphite Nucleation in DI (96-151)—M. Chisamera, I. Riposan, M. Barstow	581
Service Modulus: A Method for Accurate Determination of Young's Modulus and Yield Strength in Ductile Iron (96-53)—K.E. Metzloff, H.W. Kwon, L.Y. Fang, C.R. Loper, Jr.	721
So You Want to Pour Ductile Iron (96-244)—L.E. Helm	1275
Solidification of Multi-Alloyed White Cast Iron: Type and Morphology of Carbides (96-140)— H.-Q. Wu, N. Sasaguri, Y. Matsubara, M. Hashimoto	103
Titanium Effect on Structure and Properties of Gray Iron Permanent Mold Castings (96-142)—Y.S. Lerner	1011
Welding and Brazing Characteristics of Austempered Ductile Irons (96-62)—A. Basak, B.V.S.K. Sastry	517

INVESTMENT CASTING, DIV. 6

Processing and Evaluation of Investment Cast Magnesium-Base Alloy (96-80)—M.H. Idris, A.J. Clegg	237
---	-----

PATTERN & FOUNDRY TOOLING, DIV. 7

Assessing Dimensional Repeatability of Metalcasting Processes (AFS Research) (96-224)*—F.E. Peters, R. Valaga, R.C. Voigt	181
Formal Quality Systems in the Pattern Shop (96-126)—R.A. Young	347
Further Evaluation of Wear Analysis of Selected Tooling Materials Using Impact Abrasion Testing (96-105)—L.F. Vondra, M.C. Formanek	317
Optimized Recursive Foundry Tooling Fabrication Method (96-106)—R.J. Cass, Y.H. Pao, S.R. LeClair	815
Producing Tomorrow's Molds with Abraded Electrodes and EDM (96-103)—R.D. Tincu	303
Statistically-Based Pattern Approval Process (96-104)—L.A. Potter, R.C. Voigt, F. Peters, J. Lies, M.J. Chandra	307

MELTING METHODS & MATERIALS, DIV. 8

Application of Induction Ladle Furnace as a Melting Tool (96-69)—H.G. Heine	805
Applications of AFS/DoE Cupola Model (AFS Research) (96-202)*—V. Stanek, S. Katz, C. Landefeld, L. Smiley	1223
Chemical Reactions of Liquid Metal in Slag Layer and Well of Cupola, Part I: Development of Kinetic Model (96-34)—H. Sun, K. Mori, R.D. Pehlke	595
Chemical Reactions of Liquid Metal in Slag Layer and Well of Cupola, Part II: Prediction of Metal Composition (96-35)*—H. Sun, K. Mori, R.D. Pehlke	605
Contribution to Melting of Cast Iron in Cokeless, Natural Gas-Fired Cupola Furnace (96-40)—E. Schürmann, W. Hain	693
Development of Gas-Swirling Method for Inerting Metals in Melting Furnaces (96-107)*—Z. Zurecki, R.C. Best	859
Economic Analysis of Iron Melting Technologies—Computer Spreadsheet Models (96-32)—E.M. Cooley	589
Electrical Shock Hazards as Applied to Induction Furnace Systems (96-37)—D.S. Smalley	615
Induction Melting: Moving into the 21st Century (96-67)—R.Q. Sharpless	797
Larger-Scale Cold Crucible Melting of Titanium and Its Alloys (96-68)—R.J. Roberts	523
Rapid Induction Melting Lost Crucible (RIMLOC) Process (96-108)—P. Bird, W. Savage	321
Silicon Recovery, Silicon Charged, Silicon Oxidation and Slag Silica Analyses in Acid Cupola Melting (96-39)—E.R. Kaczmarek, R. Staral, R.W. Heine	683
The Science Behind Batch Induction Melting (96-41)—J.H. Mortimer	229

STEEL, DIV. 9

A Short History of the Steel Foundry (96-89)—N. Wukovich	643
Carbon Pickup in Steel: A Study of Various Nobake Binders and Sand Additives (96-194)—W.G. Tordoff, T. Wolgram, V. Talwar, M. Hysell	461
Development of Neural Network Methodology to Predict TTT Diagrams (96-08)—D.C. Reddy, C.S. Reddy	191
Development of Thin-Wall Stainless Steel Castings Using Countergravity Process for Automobile Applications (96-82)—D. Chandley, J. Redemske, P. Mikkola, R.C. Shah	903

Effect of Alloying Elements on Properties of 16Cr Ferritic Heat-Resistant Cast Steel (96-87)—K. Nishino, H. Takamiya, Y. Awano, Y. Genma, M. Suzuki	245
Effects of Cooling Rate and C and V Contents on DAS and Eutectic Carbide Morphology of As-Cast M2 High-Speed Steel (96-83)—M. Boccalini, Jr., Y. Matsubara, H. Goldenstein	907
Nonmetallic Inclusions in Steel Castings—A Case Study in Quality Engineering (96-195)—D.N. Shivappa, A. Subash Babu, K.B. Bharati, R.H.G. Rau	171

ENVIRONMENTAL HEALTH & SAFETY, DIV. 10

Casting Emissions Reduction Program (CERP) (96-99)—G.S. Cole, D. Schuetzle, J.D. Rogers, S.M. Tomazewski, M. Bindbeutel, B. Haukkala, D. Eppey, W.C. Walden, S.M. Knight, L. Dobitz	539
ISO 14001: The International Standard for Environmental Management Systems (96-122)—D. Scrimshire	325
Pollution Prevention—The Options (96-101)—D.S. Leidel	917
Survey of State Environmental Regulations Impacting Beneficial Reuse of Foundry Residuals (96-95)—P. Kauffmann, R.W. Regan, R.C. Voigt	527
Thermodynamic Equilibrium of Lead and Iron With Triple Superphosphate (96-97)—E. Kaya, R.W. Regan, Sr., K. Osseo-Asare	651
Two-Year Campaign for a Better Work Environment (96-100)—Z. Tiroler	809

LOST FOAM CASTING, DIV. 11

Effect of Continuous Mixing on Viscosity and Permeability of an Iron Lost Foam Coating: A Joint Study (96-123)—R.A. Bambauer, T. Lee, T. DeLong	329
Effects of Coating Thickness and Pouring Temperature on Thermal Response in Lost Foam Casting (96-93)—R. Venkataramani, C. Ravindran	281
Effects of Silicon Content, Coating Materials and Gating Design on Casting Defects in the Aluminum Lost Foam Process (AFS Research) (96-92)—Y. Sun, H.L. Tsai, D.R. Askeland	271
Incorporating Permeability Into Lost Foam Coating Controls (96-96)—G.H. Kocan	565
Lost Foam Casting—Process Control for Precision (96-124)—H.E. Littleton, B.A. Miller, D. Sheldon, C.E. Bates	335
Mold-Filling Analysis for Ductile Iron Lost Foam Castings (96-125)—O. Gurdogan, H. Huang, H.U. Akay, W.W. Fincher, V.E. Wilson	451
Transport of Foam Decomposition Products into the Sand in the Lost Foam Casting Process (AFS Research) (96-91)—J. Fu, H.L. Tsai, D.R. Askeland	263

MARKETING/MANAGEMENT DIV. 14

Cooperative Research and Development in the European Foundry Industry (96-233)—J.-L. Fouret	1265
Operations Technology for Demand Flow (96-94)—J.A. Zbiegien, Sr.	291
Perspective of China's Foundry in Next Decade (96-102)—L. Miao	297
Price Response Service: An Opportunity for the Foundry Industry (96-178)—R.F. Sugra	379

Author Index

A

- Aagard, R.; Hattel, J.; Schäfer, W.; Svensson, I.L.; Hansen, P.N.
Simulation vs. Reality of an Industrial Ductile Iron Casting 659
- Achten, M.; Sahm, P.R.; Bührig-Polaczek, A.; Zeuner, T.;
Stojanov, P.
Thixocasting and Low-Pressure/Counter-Pressure
Diecasting: Processes for Production of High-Quality
Casting of Al-Alloys 1103
- Ahire, S.; Singh, S.; Ramrattan, S.N.; Bringelson, L.
Simulation of a Foundry Sand System 821
- Akarte, M.M.; Ravi, B.
Casting Information Management 217
- Akay, H.U.; Gurdogan, O.; Huang, H.;
Fincher, W.W.; Wilson, V.E.
Mold-Filling Analysis for Ductile Iron Lost Foam Castings 451
- Altpeter, I.; Laub, U.
Detecting Chilling Tendency in Series-Manufactured Cast
Iron Components Using Micromagnetic Test Procedures 1031
- An, Y.-K.; Nyamekye, K.
Using Rapid Modeling Technology in a Permanent
Mold Casting Production Facility 395
- Andersen, M.; Hansen, P.N.; Rasmussen, N.W.; Andersen, U.
High-Integrity Aluminum Casting in Flaskless
Molds Made of Green Sand and Magnetite Ore 873
- Andersen, U.; Hansen, P.N.; Rasmussen, N.W.; Andersen, M.
High-Integrity Aluminum Casting in Flaskless
Molds Made of Green Sand and Magnetite Ore 873
- Askeland, D.R.; Gross, M.J.; Wistehuff, G.; Colthurst, H.
Effects of Mg, Ce, Ca, S and La on Graphite
Stability in DI During Extended Holding 497
- Askeland, D.R.; Sun, Y.; Tsai, H.L.
Effects of Silicon Content, Coating Materials
and Gating Design on Casting Defects in the
Aluminum Lost Foam Process 271
- Askeland, D.R.; Wei, S.; Dillingham, J.; Jiranek, M.R.;
Nyamekye, K.; Ramsay, C.W.; Pischel, R.
Influence of Mold Coating on Heat Transport in
Permanent Mold Casting Process 251
- Askeland, D.R.; Dillingham, J.; Ramsay, C.W.
Literature Review for Tenacious Coatings for
Aluminum Permanent Mold Casting Process 1079
- Askeland, D.R.; Fu, J.; Tsai, H.L.
Transport of Foam Decomposition Products into the
Sand in the Lost Foam Casting Process 263
- Atluri, R.; Spangler, K.R.; Rammohan, N.; Creese, R.C.
Metalcasting Benchmarking 1209
- Awano, Y.; Nishino, K.; Takamiya, H.; Genma, Y.; Suzuki, M.
Effect of Alloying Elements on Properties of
16Cr Ferritic Heat-Resistant Cast Steel 245
- Azar, F.; Lim, C.S.; Clegg, A.J.
Heat Treatment of a Squeeze-Infiltrated,
Fiber-Reinforced Al Alloy MMC 1171

B

- Baker, S.G.; LaDow, W.R.; Geoffrey, M.M.
Evaluation of a High-Performance Urethane
Coldbox Binder: A Case Study 937
- Bakhtiyarov, S.I.; Overfelt, R.A.
Study of Cohesive Flow in Fluidized Foundry Sands 705
- Bambauer, R.A.; Lee, T.; DeLong, T.
Effect of Continuous Mixing on Viscosity and
Permeability of an Iron Lost Foam Coating: A Joint Study 329
- Bargh, F.G.; Barnes, G.R.
Performance Report on Smartpour: Case Studies 439
- Barlow, J.; Giese, S.R.; Stefanescu, D.M.; Piwonka, T.S.
Cast Iron Penetration in Sand Molds, Part II:
Experimental Evaluation of Some Main Parameters
Responsible for Penetration 1249
- Barnes, G.R.; Bargh, F.G.
Performance Report on Smartpour: Case Studies 439
- Barstow, M.; Chisamera, M.; Riposan, I.
S-Inoculation of Mg-Treated Cast Iron to Obtain
CG Cast Iron and Improve Graphite Nucleation in DI 581
- Bartelt, P.F.; Grady, M.R.; Dibble, D.
Application of Intelligent Techniques for Green Sand Control .. 1003
- Basak, A.; Sastry, B.V.S.K.
Welding and Brazing Characteristics of
Austempered Ductile Irons 517
- Bates, C.E.; Dwyer, Z.B.; Griffin, R.D.
Defects in Ductile Iron Castings 89
- Bates, C.E.; Littleton, H.E.; Miller, B.A.; Sheldon, D.
Lost Foam Casting—Process Control for Precision 335
- Bates, C.E.; Griffin, R.D.; Scarber, P.; Janowski, G.M.
Quantitative Characterization of Graphite in Gray Iron 977
- Batson, R.G.; Moynihan, G.P.; Datta, D.; Nichols, W.G.
Information Engineering Approach to Interpreting
ISO 9000 Requirements to Foundry Operations 147
- Batson, R.G.; Reddy, M.
Simulation of Metal Distribution Process
in an Automated Pipe Shop 385
- Begg, J.; Clegg, A.J.
Production and Evaluation of Squeeze-Cast
Zinc-Aluminum (ZA) Alloys 1159
- Best, R.C.; Zurecki, Z.
Development of Gas-Swirling Method for
Inerting Metals in Melting Furnaces 859
- Bharati, K.B.; Shivappa, D.N.; Subash Babu, A.; Rau, R.H.G.
Nonmetallic Inclusions in Steel Castings—
A Case Study in Quality Engineering 171
- Bhaskaran, C.A.; Sparkman, D.A.
Chill Measurement by Thermal Analysis 969
- Bibby, C.; Fasoyinu, F.A.; Dion, J.L.; Cousineau, D.; Sahoo, M.
Gravity Permanent Mold Casting of Graphite-Dispersed
Copper-Base Alloys 415

Bibby, C.; Dion, J.L.; Fasoyinu, F.A.; Cousineau, D.; Sahoo, M. Permanent Mold Casting of High-Conductivity Copper	405
Biederman, S.; Siak, J.-S.; Whited, W.; Schreck, R.; Datte, M. Nontoxic, Recyclable, Core Sand Binder for Aluminum Castings	1213
Bigge, R.H.; Loper, Jr., C.R.; Kristiansen, J.O.; Haase, A.L.; Quilling, F.A.; Krouse, R.S.; Chowdhury, A.K. Beneficial Reuse of Desulfurization Slag	29
Bindbeutel, M.; Cole, G.S.; Schuetzle, D.; Rogers, J.D.; Tomazewski, S.M.; Haukkala, B.; Eppley, D.; Walden, W.C.; Knight, S.M.; Dobitz, L. Casting Emissions Reduction Program (CERP)	539
Bird, P.; Savage, W. Rapid Induction Melting Lost Crucible (RIMLOC) Process	321
Björkegren, L.-E.; Hamberg, K.; Johannesson, B. Mechanical Properties and Machinability of Si-Solution-Hardened Ferritic Ductile Iron	139
Blackburn, P.A.; Henry, C.M. A More Productive Phenolic Urethane Coldbox Process	945
Boccalini, Jr., M.; Matsubara, Y.; Goldenstein, H. Effects of Cooling Rate and C and V Contents on DAS and Eutectic Carbide Morphology of As-Cast M2 High-Speed Steel	907
Boeri, R.E.; Massone, J.M.; Sikora, J.A. Decomposition of High-Carbon Austenite in ADI	133
Boisvert, A.; Chiesa, F. Factors Affecting Drying Conditions of Coatings Sprayed on Permanent Molds	769
Bosscher, P.J.; Kuraoka, S. Numerical Simulation of Circulation Flow of Granular Materials During Vertical Vibration	619
Boyd, J.D.; Nadkarni, G.; Gokhale, S. Elevated Temperature Microstructural Stability of Austempered Ductile Irons	985
Bridenbaugh, P.R. Role of Casting Technology in the Transportation Industry	673
Brigham, R.; Mitrovic-Scepanovic, V.; Sahoo, M. Corrosion Behavior of Sand-Cast Red Brass Containing Bi and Se	467
Bringelson, L.; Singh, S.; Ramrattan, S.N.; Ahire, S. Simulation of a Foundry Sand System	821
Brunelle, M.; Chiesa, F.; Mathieu, D. A Study on the Metallurgical Quality of Disk Brake Rotors	19
Bührig-Polaczek, A.; Sahm, P.R.; Achten, M.; Zeuner, T.; Stojanov, P. Thixocasting and Low-Pressure/Counter-Pressure Diecasting: Processes for Production of High-Quality Casting of Al-Alloys	1103
Burbielko, A.A.; Frás, E.; Kapturkiewicz, W.; Lopez, H.F. Secondary Nucleation of Eutectic Graphite Grains	1
Busby, A.D. Future Trends in Molding Techniques for High-Production Foundries	957

C

Caceres, C.H.; Wang, Q.G. Solidification Conditions, Heat Treatment and Tensile Ductility of Al-7Si-0.4Mg Casting Alloys	1039
Campbell, J.; Tiriyakioglu, M.; Green, N.R. Review of Reliable Processes for Aluminum Aerospace Castings	1069

Carr, P.B.; Gilson, D.M.; Horton, K.B. Air Flow Variations Within a Corebox: A Study of Vent Open Area and Sand Variables	951
Casad, C.; Mani, P.H. Ballistic Evaluation, Part I: Ten Different Cast Iron Materials	33
Casad, C.; Mani, P.H. Ballistic Evaluation, Part II: Austempered Malleable and Austempered Ductile Irons	41
Cass, R.J.; Pao, Y.H.; LeClair, S.R. Optimized Recursive Foundry Tooling Fabrication Method	815
Chakrabarti, A.K.; Ghosh, S.; Prodhan, A.; Mohanty, O.N. Effect of Alloy Composition and Inoculation on Microstructure and Cracking Susceptibility of Aluminum Cast Irons	67
Chandley, D.; Redemske, J.; Mikkola, P.; Shah, R.C. Development of Thin-Wall Stainless Steel Castings Using Countergravity Process for Automobile Applications	903
Chandra, M.J.; Potter, L.A.; Voigt, R.C.; Peters, F.; Lies, J. Statistically-Based Pattern Approval Process	307
Chang, C.H.; Shih, T.-S.; Chau, S.Y. Optimization of Austenitizing Treatment of Austempered Ductile Irons	557
Chang, E.; Kao, S.-T. Feeding Efficiency Criteria for Porosity Formation in A356 Alloy Sand Plate Castings	545
Chau, S.Y.; Shih, T.-S.; Chang, C.H. Optimization of Austenitizing Treatment of Austempered Ductile Irons	557
Chen, C.Y.; Pan, E.N. Effects of Bi and Sb on Graphite Structure of Heavy-Section Ductile Cast Irons	845
Chen, J.H.; Tsai, H.L. Effect of Riser Design on Fluid Flow and Solidification Patterns During Casting Solidification	371
Chen, L.H.; Kuan, S.L.; Lui, T.S. Solidification Structure of Al-Si Strip by Unequal Diameter Twin-Roller Strip Casting Process	735
Chen, Y.-F.; Hwang, W.-S. Improvements on Solidification Modeling for A356.2 Aluminum Alloy	1203
Chen, Y.-F.; Hwang, W.-S. Mold-Filling Simulation with Partial-Cell Method	197
Cheon, B.W.; Oh, J.K.; Hong, Y.M.; Choi, C.O. Properties of Sodium Silicate-Bonded Molding Sands With L-D Converter Slag Powder	571
Chiesa, F.; Mathieu, D.; Brunelle, M. A Study on the Metallurgical Quality of Disk Brake Rotors	19
Chiesa, F.; Boisvert, A. Factors Affecting Drying Conditions of Coatings Sprayed on Permanent Molds	769
Chisamera, M.; Riposan, I.; Barstow, M. S-Inoculation of Mg-Treated Cast Iron to Obtain CG Cast Iron and Improve Graphite Nucleation in DI	581
Choi, C.O.; Oh, J.K.; Cheon, B.W.; Hong, Y.M. Properties of Sodium Silicate-Bonded Molding Sands With L-D Converter Slag Powder	571
Chowdhury, A.K.; Loper, Jr., C.R.; Kristiansen, J.O.; Haase, A.L.; Bigge, R.H.; Quilling, F.A.; Krouse, R.S. Beneficial Reuse of Desulfurization Slag	29
Christensen, H.J.; Townsend, D.E.; Hughey, J.E. Improving Iron Control Through Automated Ladle Additions	97

Clegg, A.J.; Azar, F.; Lim, C.S. Heat Treatment of a Squeeze-Infiltrated, Fiber-Reinforced Al Alloy MMC	1171
Clegg, A.J.; Idris, M.H. Processing and Evaluation of Investment Cast Magnesium-Base Alloy	237
Clegg, A.J.; Begg, J. Production and Evaluation of Squeeze-Cast Zinc-Aluminum (ZA) Alloys	1159
Cole, G.S.; Schuetzle, D.; Rogers, J.D.; Tomazewski, S.M.; Bindbeutel, M.; Haukkala, B.; Eppley, D.; Walden, W.C.; Knight, S.M.; Dobitz, L. Casting Emissions Reduction Program (CERP)	539
Colthurst, H.; Gross, M.J.; Wistehuff, G.; Askeland, D.R. Effects of Mg, Ce, Ca, S and La on Graphite Stability in DI During Extended Holding	497
Cooley, E.M. Economic Analysis of Iron Melting Technologies— Computer Spreadsheet Models	589
Correa, E.R.; Fuoco, R.; Goldenstein, H. Effect of Modification Treatment on Microporosity Formation in 356 Al Alloy, Part I: Interdendritic Feeding Evaluation	1151
Cousineau, D.; Fasoyinu, F.A.; Dion, J.L.; Bibby, C.; Sahoo, M. Gravity Permanent Mold Casting of Graphite-Dispersed Copper-Base Alloys	415
Cousineau, D.; Dion, J.L.; Fasoyinu, F.A.; Bibby, C.; Sahoo, M. Permanent Mold Casting of High-Conductivity Copper	405
Creese, R.C.; Spangler, K.R.; Rammohan, N.; Atluri, R. Metalcasting Benchmarking	1209

D

Datta, D.; Moynihan, G.P.; Batson, R.G.; Nichols, W.G. Information Engineering Approach to Interpreting ISO 9000 Requirements to Foundry Operations	147
Datte, M.; Siak, J.-S.; Whited, W.; Schreck, R.; Biederman, S. Nontoxic, Recyclable, Core Sand Binder for Aluminum Castings	1213
de la Sablonniere, H.; Samuel, F.H. PoDFA Measurement of Inclusions in 319.1 Alloy: Effect of Mg (0.45 Wt%) Addition and Role of Sludge	751
DeLong, T.; Bambauer, R.A.; Lee, T. Effect of Continuous Mixing on Viscosity and Permeability of an Iron Lost Foam Coating: A Joint Study	329
Dempsey, Jr., T.C.; LaFay, V.S.; Neltner, S.L. Application of a Hotbox Sodium Silicate Binder to the Foundry Industry	837
Deqing, W.; Lopez, H.F. Effect of Austempering on Wear Properties of Boron Cast Iron	109
Dibble, D.; Bartelt, P.F.; Grady, M.R. Application of Intelligent Techniques for Green Sand Control	1003
Dillingham, J.; Wei, S.; Jiranek, M.R.; Nyamekye, K.; Ramsay, C.W.; Askeland, D.R.; Pischel, R. Influence of Mold Coating on Heat Transport in Permanent Mold Casting Process	251
Dillingham, J.; Ramsay, C.W.; Askeland, D.R. Literature Review for Tenacious Coatings for Aluminum Permanent Mold Casting Process	1079

Dion, J.L.; Fasoyinu, F.A.; Cousineau, D.; Bibby, C.; Sahoo, M. Gravity Permanent Mold Casting of Graphite-Dispersed Copper-Base Alloys	415
Dion, J.L.; Fasoyinu, F.A.; Cousineau, D.; Bibby, C.; Sahoo, M. Permanent Mold Casting of High-Conductivity Copper	405
Dobitz, L.; Cole, G.S.; Schuetzle, D.; Rogers, J.D.; Tomazewski, S.M.; Bindbeutel, M.; Haukkala, B.; Eppley, D.; Walden, W.C.; Knight, S.M. Casting Emissions Reduction Program (CERP)	539
Doty, H.W.; Samuel, F.H.; Samuel, A.M. Factors Controlling the Type and Morphology of Cu-Containing Phases in 319 Al Alloy	893
Dwyer, Z.B.; Griffin, R.D.; Bates, C.E. Defects in Ductile Iron Castings	89

E

Ebert, S. QS 9000 Implementation and Audit Case Study	351
Emadi, D.; Gruzleski, J.E.; Pekgulyuz, M. Melt Oxidation Behavior and Inclusion Content in Unmodified and Sr-Modified A356 Alloy— Their Role in Pore Nucleation	763
Eppley, D.; Cole, G.S.; Schuetzle, D.; Rogers, J.D.; Tomazewski, S.M.; Bindbeutel, M.; Haukkala, B.; Walden, W.C.; Knight, S.M.; Dobitz, L. Casting Emissions Reduction Program (CERP)	539
Er, A.; Sweeney, E.T.; Kondic, V. Knowledge-Based System for Casting Process Selection	363

F

Fan, C.C.; Pan, E.N.; Hu, J.F. Solution-Treatment Conditions for Optimal Tensile Properties in A357 Alloy	1119
Fang, L.Y.; Metzloff, K.E.; Kwon, H.W.; Loper, Jr., C.R. Service Modulus: A Method for Accurate Determination of Young's Modulus and Yield Strength in Ductile Iron	721
Fasoyinu, F.A.; Dion, J.L.; Cousineau, D.; Bibby, C.; Sahoo, M. Gravity Permanent Mold Casting of Graphite-Dispersed Copper-Base Alloys	415
Fasoyinu, F.A.; Dion, J.L.; Cousineau, D.; Bibby, C.; Sahoo, M. Permanent Mold Casting of High-Conductivity Copper	405
Feikus, F.J.; Müller, W. Optimization of Low-Pressure Diecasting Process	1111
Fincher, W.W.; Gurdogan, O.; Huang, H.; Akay, H.U.; Wilson, V.E. Mold-Filling Analysis for Ductile Iron Lost Foam Castings	451
Formanek, M.C.; Vondra, L.F. Further Evaluation of Wear Analysis of Selected Tooling Materials Using Impact Abrasion Testing	317
Fouret, J.-L. Cooperative Research and Development in the European Foundry Industry	1265
Fras, E.; Kapturkiewicz, W.; Burbielko, A.A.; Lopez, H.F. Secondary Nucleation of Eutectic Graphite Grains	1
Fu, J.; Tsai, H.L.; Askeland, D.R. Transport of Foam Decomposition Products into the Sand in the Lost Foam Casting Process	263
Fuoco, R.; Correa, E.R.; Goldenstein, H. Effect of Modification Treatment on Microporosity Formation in 356 Al Alloy, Part I: Interdendritic Feeding Evaluation	1151

G

Gagné, M.; Trudel, A.; Lavallée, F. Counteracting the Effect of Steel Scrap Residuals in Ductile Iron Castings	123
Gaindhar, J.L.; Kumar, P. Effect of Process Variables on Surface Finish and Soundness of Al-11%Si Alloy V-Process Castings	1143
Genma, Y.; Nishino, K.; Takamiya, H.; Awano, Y.; Suzuki, M. Effect of Alloying Elements on Properties of 16Cr Ferritic Heat-Resistant Cast Steel	245
Genualdi, A.J.; Subramanian, S.V. Optimization of Damping Capacity and Strength in Hypereutectic Gray Cast Iron	995
Geoffrey, M.M.; Baker, S.G.; LaDow, W.R. Evaluation of a High-Performance Urethane Coldbox Binder: A Case Study	937
Geoffrey, M.M.; Laitar, R.A. New Foundry Binder Technologies: A Review of Environmental and Productivity Improvements	929
Ghosh, S.; Prodhon, A.; Chakrabarti, A.K.; Mohanty, O.N. Effect of Alloy Composition and Inoculation on Microstructure and Cracking Susceptibility of Aluminum Cast Irons	67
Giese, S.R.; Stefanescu, D.M.; Piwonka, T.S.; Lane, A.M. Cast Iron Penetration in Sand Molds, Part I: Physics of Penetration Defects and Penetration Model	1233
Giese, S.R.; Stefanescu, D.M.; Barlow, J.; Piwonka, T.S. Cast Iron Penetration in Sand Molds, Part II: Experimental Evaluation of Some Main Parameters Responsible for Penetration	1249
Gilson, D.M.; Horton, K.B.; Carr, P.B. Air Flow Variations Within a Corebox: A Study of Vent Open Area and Sand Variables	951
Gokhale, S.; Nadkarni, G.; Boyd, J.D. Elevated Temperature Microstructural Stability of Austempered Ductile Irons	985
Goldenstein, H.; Fuoco, R.; Correa, E.R. Effect of Modification Treatment on Microporosity Formation in 356 Al Alloy, Part I: Interdendritic Feeding Evaluation	1151
Goldenstein, H.; Boccalini, Jr., M.; Matsubara, Y. Effects of Cooling Rate and C and V Contents on DAS and Eutectic Carbide Morphology of As-Cast M2 High-Speed Steel	907
Gopalakrishna, V.; Mahesh, N.S.; Muralidhara, M.K.; Saran, T.N. Investigation and Recommendation for Improvement of Mechanical Properties in Al-Cu-Ni-Zr Alloy (AA203.2)	1183
Grady, M.R.; Bartelt, P.F.; Dibble, D. Application of Intelligent Techniques for Green Sand Control ..	1003
Granlund, M.J.; Shturmakov, A.J. Improving Quality of Iron and Steel Castings Made by Impact Molding Method	709
Green, N.R.; Tiryakioglu, M.; Campbell, J. Review of Reliable Processes for Aluminum Aerospace Castings	1069
Griffin, R.D.; Dwyer, Z.B.; Bates, C.E. Defects in Ductile Iron Castings	89
Griffin, R.D.; Scarber, P.; Janowski, G.M.; Bates, C.E. Quantitative Characterization of Graphite in Gray Iron	977
Gross, M.J.; Wistehuff, G.; Colthurst, H.; Askeland, D.R. Effects of Mg, Ce, Ca, S and La on Graphite Stability in DI During Extended Holding	497

Gruzleski, J.E.; Kulunk, B.; Shabestari, S.G.; Zuiiani, D.J. Beneficial Effects of Strontium on A380 Alloy	1189
Gruzleski, J.E.; Emadi, D.; Pekguleryuz, M. Melt Oxidation Behavior and Inclusion Content in Unmodified and Sr-Modified A356 Alloy— Their Role in Pore Nucleation	763
Guichelaar, P.J.; Ramrattan, S.N.; Palukunnu, A.; Tieder, R. Study of Foundry Granular Media and Its Attrition	877
Guo, R.Q.; Rohatgi, P.K.; Ray, S. Casting Characteristics of Aluminum Alloy, Fly Ash Composites	1097
Gurdogan, O.; Huang, H.; Akay, H.U.; Fincher, W.W.; Wilson, V.E. Mold-Filling Analysis for Ductile Iron Lost Foam Castings	451

H

Haase, A.L.; Loper, Jr., C.R.; Kristiansen, J.O.; Bigge, R.H.; Quilling, F.A.; Krouse, R.S.; Chowdhury, A.K. Beneficial Reuse of Desulfurization Slag	29
Hain, W.; Schürmann, E. Contribution to Melting of Cast Iron in Cokeless, Natural Gas-Fired Cupola Furnace	693
Hamberg, K.; Björkegren, L.-E.; Johannesson, B. Mechanical Properties and Machinability of Si-Solution-Hardened Ferritic Ductile Iron	139
Hansen, P.N.; Rasmussen, N.W.; Andersen, U.; Andersen, M. High-Integrity Aluminum Casting in Flaskless Molds Made of Green Sand and Magnetite Ore	873
Hansen, P.N.; Aagard, R.; Hattel, J.; Schäfer, W.; Svensson, I.L. Simulation vs. Reality of an Industrial Ductile Iron Casting	659
Harada, S.; Qian, M.; Zhaochang, W. Initiation and Propagation of Microcracks in White Cast Irons Under Static Indentation Test	729
Hashimoto, K.; Sugiura, T.; Naito, M. Molding Properties of the Air-Flow Press Molding Process	699
Hashimoto, M.; Wu, H.-Q.; Sasaguri, N.; Matsubara, Y. Solidification of Multi-Alloyed White Cast Iron: Type and Morphology of Carbides	103
Hattel, J.; Aagard, R.; Schäfer, W.; Svensson, I.L.; Hansen, P.N. Simulation vs. Reality of an Industrial Ductile Iron Casting	659
Haukka, B.; Cole, G.S.; Schuetzle, D.; Rogers, J.D.; Tomazewski, S.M.; Bindbeutel, M.; Eppley, D.; Walden, W.C.; Knight, S.M.; Dobitz, L. Casting Emissions Reduction Program (CERP)	539
Heine, H.G. Application of Induction Ladle Furnace as a Melting Tool	805
Heine, R.W.; Kaczmarek, E.R.; Staral, R. Silicon Recovery, Silicon Charged, Silicon Oxidation and Slag Silica Analyses in Acid Cupola Melting	683
Helm, L.E. So You Want to Pour Ductile Iron	1275
Henry, C.M.; Blackburn, P.A. A More Productive Phenolic Urethane Coldbox Process	945
Highfield, J.W.; Ulfers, H.M. Processing Foundry Sands at John Deere: Turning Waste Management into Asset Management	717
Hitchings, J.R.; Loper, Jr., C.R.; Javadi, A. Molten Metal Flow Rates Through Refractory Cloth Filters	57
Hong, C.-H.; Shih, T.-S.; Hsiao, S.-S. Movements of Vaporization Interface and Temperature Distributions in Green Sand Molds	481

Hong, X.; Jun, C.; Xiaozhong, X. Development and Practice of Three-Dimensional Solidification Simulation Software	435
Hong, Y.M.; Oh, J.K.; Cheon, B.W.; Choi, C.O. Properties of Sodium Silicate-Bonded Molding Sands With L-D Converter Slag Powder	571
Horton, K.B.; Gilson, D.M.; Carr, P.B. Air Flow Variations Within a Corebox: A Study of Vent Open Area and Sand Variables	951
Hsiau, S.-S.; Hwang, L.-R.; Shih, T.-S. Effect of Viscosity on Fluid Flow in Gating Systems	11
Hsiau, S.-S.; Shih, T.-S.; Hong, C.-H. Movements of Vaporization Interface and Temperature Distributions in Green Sand Molds	481
Hu, J.F.; Pan, E.N.; Fan, C.C. Solution-Treatment Conditions for Optimal Tensile Properties in A357 Alloy	1119
Huang, H.; Gurdogan, O.; Akay, H.U.; Fincher, W.W.; Wilson, V.E. Mold-Filling Analysis for Ductile Iron Lost Foam Castings	451
Hughey, J.E.; Christensen, H.J.; Townsend, D.E. Improving Iron Control Through Automated Ladle Additions	97
Hwang, L.-R.; Shih, T.-S.; Hsiau, S.-S. Effect of Viscosity on Fluid Flow in Gating Systems	11
Hwang, L.-R.; Shih, T.-S. Filling Phenomena and Accumulated Air Pressure in Mold Cavity of Top-Gated Systems	627
Hwang, L.-R.; Shih, T.-S.; Hwang, M.-Y. Reaction Gases of Heated Green Sand Molds	825
Hwang, M.-Y.; Shih, T.-S.; Hwang, L.-R. Reaction Gases of Heated Green Sand Molds	825
Hwang, W.-S.; Chen, Y.-F. Improvements on Solidification Modeling for A356.2 Aluminum Alloy	1203
Hwang, W.-S.; Chen, Y.-F. Mold-Filling Simulation with Partial-Cell Method	197
Hysell, M.; Tordoff, W.G.; Wolfram, T.; Talwar, V. Carbon Pickup in Steel: A Study of Various Nobake Binders and Sand Additives	461
I	
Idris, M.H.; Clegg, A.J. Processing and Evaluation of Investment Cast Magnesium-Base Alloy	237
Imanishi, K.; Nagayoshi, H. Effect of Mg Content of Spheroidizer on Chilling Tendency of SG Melt	75
Itofuji, H. Proposal of Site Theory	79
J	
Jacobs, M.L.; Winters, D.L.; Kaschemekat, J. Methyl Formate Recovery in Ester-Cured Phenolic Coldbox Process, Using Membrane Technology	923
Janowski, G.M.; Griffin, R.D.; Scarber, P.; Bates, C.E. Quantitative Characterization of Graphite in Gray Iron	977
Javaid, A.; Loper, Jr., C.R.; Hitchings, J.R. Molten Metal Flow Rates Through Refractory Cloth Filters	57
Jiang, J.; Wu, J.; Yang, G.; Xie, B. Application of FEM to Predict Hardness Distribution of Air-Impact, Compacted Green Sand Molds	491
Jiranek, M.R.; Wei, S.; Dillingham, J.; Nyamekye, K.; Ramsay, C.W.; Askeland, D.R.; Pischel, R. Influence of Mold Coating on Heat Transport in Permanent Mold Casting Process	251
Johannesson, B.; Björkegren, L.-E.; Hamberg, K. Mechanical Properties and Machinability of Si-Solution-Hardened Ferritic Ductile Iron	139
Jorstad, J.L. Hypereutectic Al-Si Casting Alloys: 25 Years, What's Next? ...	669
Jun, C.; Xiaozhong, X.; Hong, X. Development and Practice of Three-Dimensional Solidification Simulation Software	435
K	
Kaczmarek, E.R.; Staral, R.; Heine, R.W. Silicon Recovery, Silicon Charged, Silicon Oxidation and Slag Silica Analyses in Acid Cupola Melting	683
Kamada, T.; Shimizu, K.; Noguchi, T.; Takasaki, H. Formation and Progression of Erosion Surface in Spheroidal Graphite Cast Iron	511
Kao, S.-T.; Chang, E. Feeding Efficiency Criteria for Porosity Formation in A356 Alloy Sand Plate Castings	545
Kapturkiewicz, W.; Frasz, E.; Burbielko, A.A.; Lopez, H.F. Secondary Nucleation of Eutectic Graphite Grains	1
Kaschemekat, J.; Winters, D.L.; Jacobs, M.L. Methyl Formate Recovery in Ester-Cured Phenolic Coldbox Process, Using Membrane Technology	923
Katz, S.; Stanek, V.; Landefeld, C.; Smiley, L. Applications of AFS/DoE Cupola Model	1223
Kauffmann, P.; Regan, R.W.; Voigt, R.C. Survey of State Environmental Regulations Impacting Beneficial Reuse of Foundry Residuals	527
Kaya, E.; Regan, Sr., R.W.; Osseo-Asare, K. Thermodynamic Equilibrium of Lead and Iron With Triple Superphosphate	651
Kim, J.K.; Rohatgi, P.K.; Sobczak, J.; Sobczak, N.; Ray, S. Centrifugal Casting of Lead-Free Copper-Graphite Alloys	1217
Kim, J.M.; Kwon, H.W.; Loper, Jr., C.R. Feeding Behavior of Modified and Unmodified Al-Si Alloys	743
Knight, S.M.; Cole, G.S.; Schuetzle, D.; Rogers, J.D.; Tomazewski, S.M.; Bindbeutel, M.; Haukka, B.; Eppley, D.; Walden, W.C.; Dobitz, L. Casting Emissions Reduction Program (CERP)	539
Kocan, G.H. Incorporating Permeability Into Lost Foam Coating Controls	565
Kondic, V.; Er, A.; Sweeney, E.T. Knowledge-Based System for Casting Process Selection	363
Kristiansen, J.O.; Loper, Jr., C.R.; Haase, A.L.; Bigge, R.H.; Quilling, F.A.; Krouse, R.S.; Chowdhury, A.K. Beneficial Reuse of Desulfurization Slag	29
Krouse, R.S.; Loper, Jr., C.R.; Kristiansen, J.O.; Haase, A.L.; Bigge, R.H.; Quilling, F.A.; Chowdhury, A.K. Beneficial Reuse of Desulfurization Slag	29
Kuan, S.L.; Lui, T.S.; Chen, L.H. Solidification Structure of Al-Si Strip by Unequal Diameter Twin-Roller Strip Casting Process	735

Kulunk, B.; Shabestari, S.G.; Gruzleski, J.E.; Zuliani, D.J. Beneficial Effects of Strontium on A380 Alloy	1189
Kumar, P.; Gaiindhar, J.L. Effect of Process Variables on Surface Finish and Soundness of Al-11%Si Alloy V-Process Castings	1143
Kuraoka, S.; Bosscher, P.J. Numerical Simulation of Circulation Flow of Granular Materials During Vertical Vibration	619
Kwon, H.W.; Kim, J.M.; Loper, Jr., C.R. Feeding Behavior of Modified and Unmodified Al-Si Alloys	743
Kwon, H.W.; Metzloff, K.E.; Fang, L.Y.; Loper, Jr., C.R. Service Modulus: A Method for Accurate Determination of Young's Modulus and Yield Strength in Ductile Iron	721
L	
LaDow, W.R.; Baker, S.G.; Geoffrey, M.M. Evaluation of a High-Performance Urethane Coldbox Binder: A Case Study	937
LaFay, V.S.; Neltner, S.L.; Dempsey, Jr., T.C. Application of a Hotbox Sodium Silicate Binder to the Foundry Industry	837
Laitar, R.A.; Geoffrey, M.M. New Foundry Binder Technologies: A Review of Environmental and Productivity Improvements	929
Landefeld, C.; Stanek, V.; Katz, S.; Smiley, L. Applications of AFS/DoE Cupola Model	1223
Landis, C.R. Analytical Pyrolysis for Detection of Benzene Potential in Sand-System Coals	865
Lane, A.M.; Stefanescu, D.M.; Giese, S.R.; Piwonka, T.S. Cast Iron Penetration in Sand Molds, Part I: Physics of Penetration Defects and Penetration Model	1233
Lane, A.M.; Patabhi, R.; Piwonka, T.S. Cast Iron Penetration in Sand Molds, Part III: Measurement of Mold-Metal Interfacial Gas Composition	1259
Laul, U.; Altpeter, I. Detecting Chilling Tendency in Series-Manufactured Cast Iron Components Using Micromagnetic Test Procedures	1031
Lavallée, F.; Trudel, A.; Gagné, M. Counteracting the Effect of Steel Scrap Residuals in Ductile Iron Castings	123
LeClair, S.R.; Cass, R.J.; Pao, Y.H. Optimized Recursive Foundry Tooling Fabrication Method	815
Lee, F.T.; Major, J.F.; Samuel, F.H. Fatigue Crack Growth and Fracture Behavior of Al-12 Wt% Si-0.35 Wt% Mg (0-0.02) Wt% Sr Casting Alloys	785
Lee, T.; Bambauer, R.A.; DeLong, T. Effect of Continuous Mixing on Viscosity and Permeability of an Iron Lost Foam Coating: A Joint Study	329
Leidel, D.S. Pollution Prevention—The Options	917
Lerner, Y.S. Titanium Effect on Structure and Properties of Gray Iron Permanent Mold Castings	1011
Li, R. Investigation of Tensile Fracture Process of Al Casting Alloys 354 and 355	887
Li, R. Solution Heat Treatment of 354 and 355 Cast Alloys	777
Lies, J.; Potter, L.A.; Voigt, R.C.; Peters, F.; Chandra, M.J. Statistically-Based Pattern Approval Process	307

Lim, C.S.; Azar, F.; Clegg, A.J. Heat Treatment of a Squeeze-Infiltrated, Fiber-Reinforced Al Alloy MMC	1171
Littleton, H.E.; Miller, B.A.; Sheldon, D.; Bates, C.E. Lost Foam Casting—Process Control for Precision	335
Loper, Jr., C.R.; Kristiansen, J.O.; Haase, A.L.; Bigge, R.H.; Quilling, F.A.; Krouse, R.S.; Chowdhury, A.K. Beneficial Reuse of Desulfurization Slag	29
Loper, Jr., C.R.; Kim, J.M.; Kwon, H.W. Feeding Behavior of Modified and Unmodified Al-Si Alloys	743
Loper, Jr., C.R.; Javaid, A.; Hitchings, J.R. Molten Metal Flow Rates Through Refractory Cloth Filters	57
Loper, Jr., C.R.; Metzloff, K.E.; Kwon, H.W.; Fang, L.Y. Service Modulus: A Method for Accurate Determination of Young's Modulus and Yield Strength in Ductile Iron	721
Lopez, H.F.; Deqing, W. Effect of Austempering on Wear Properties of Boron Cast Iron	109
Lopez, H.F.; Fras, E.; Kapturkiewicz, W.; Burbielko, A.A. Secondary Nucleation of Eutectic Graphite Grains	1
Lui, T.S.; Kuan, S.L.; Chen, L.H. Solidification Structure of Al-Si Strip by Unequal Diameter Twin-Roller Strip Casting Process	735
M	
Mahesh, N.S.; Muralidhara, M.K.; Gopalakrishna, V.; Saran, T.N. Investigation and Recommendation for Improvement of Mechanical Properties in Al-Cu-Ni-Zr Alloy (AA203.2)	1183
Major, J.F.; Lee, F.T.; Samuel, F.H. Fatigue Crack Growth and Fracture Behavior of Al-12 Wt% Si-0.35 Wt% Mg (0-0.02) Wt% Sr Casting Alloys	785
Mako, G.J.; Wang, V.W.; Matthews, A.L. Pressed Cellular Filter Application in an Aluminum Foundry ...	1045
Mampaey, F.; Xu, Z.A. Experimental and Simulation Study on Mold Filling With Various Gating Systems	155
Mani, P.H.; Casad, C. Ballistic Evaluation, Part I: Ten Different Cast Iron Materials	33
Mani, P.H.; Casad, C. Ballistic Evaluation, Part II: Austempered Malleable and Austempered Ductile Irons	41
Massone, J.M.; Boeri, R.E.; Sikora, J.A. Decomposition of High-Carbon Austenite in ADI	133
Mathieu, D.; Chiesa, F.; Brunelle, M. A Study on the Metallurgical Quality of Disk Brake Rotors	19
Matsubara, Y.; Boccalini, Jr., M.; Goldenstein, H. Effects of Cooling Rate and C and V Contents on DAS and Eutectic Carbide Morphology of As-Cast M2 High-Speed Steel	907
Matsubara, Y.; Wu, H.-Q.; Sasaguri, N.; Hashimoto, M. Solidification of Multi-Alloyed White Cast Iron: Type and Morphology of Carbides	103
Matthews, A.L.; Wang, V.W.; Mako, G.J. Pressed Cellular Filter Application in an Aluminum Foundry	1045
McLellan, D.L.; McLellan, M.M. Approach to Fatigue Design for Aluminum Castings, An	445
McLellan, M.M.; McLellan, D.L. Approach to Fatigue Design for Aluminum Castings, An	445
Metzloff, K.E.; Kwon, H.W.; Fang, L.Y.; Loper, Jr., C.R. Service Modulus: A Method for Accurate Determination of Young's Modulus and Yield Strength in Ductile Iron	721

Miao, L. Perspective of China's Foundry in Next Decade	297
Mikkola, P.; Chandley, D.; Redemske, J.; Shah, R.C. Development of Thin-Wall Stainless Steel Castings Using Countergravity Process for Automobile Applications	903
Miller, B.A.; Littleton, H.E.; Sheldon, D.; Bates, C.E. Lost Foam Casting—Process Control for Precision	335
Mitrovic-Scepanovic, V.; Brigham, R.; Sahoo, M. Corrosion Behavior of Sand-Cast Red Brass Containing Bi and Se	467
Mochnecki, B.; Suchy, J.S. Numerical Modeling of Casting Solidification: The Concept of Problem Linearization	203
Mohanty, O.N.; Ghosh, S.; Prodhon, A.; Chakrabarti, A.K. Effect of Alloy Composition and Inoculation on Microstructure and Cracking Susceptibility of Aluminum Cast Irons	67
Moncada, O.J.; Sikora, J.A. Dimensional Change in Austempered Ductile Iron	577
Mori, K.; Sun, H.; Pehlke, R.D. Chemical Reactions of Liquid Metal in Slag Layer and Well of Cupola, Part I: Development of Kinetic Model	595
Mori, K.; Sun, H.; Pehlke, R.D. Chemical Reactions of Liquid Metal in Slag Layer and Well of Cupola, Part II: Prediction of Metal Composition	605
Mortimer, J.H. The Science Behind Batch Induction Melting	229
Moynihan, G.P.; Batson, R.G.; Datta, D.; Nichols, W.G. Information Engineering Approach to Interpreting ISO 9000 Requirements to Foundry Operations	147
Müller, W.; Feikus, F.J. Optimization of Low-Pressure Diecasting Process	1111
Murali, S.; Raman, K.S.; Murthy, K.S.S. Al-7Si-0.3Mg Cast Alloy: A New Approach to Property Improvement	1175
Muralidhara, M.K.; Mahesh, N.S.; Gopalakrishna, V.; Saran, T.N. Investigation and Recommendation for Improvement of Mechanical Properties in Al-Cu-Ni-Zr Alloy (AA203.2)	1183
Murthy, K.S.S.; Murali, S.; Raman, K.S. Al-7Si-0.3Mg Cast Alloy: A New Approach to Property Improvement	1175
N	
Nadkarni, G.; Gokhale, S.; Boyd, J.D. Elevated Temperature Microstructural Stability of Austempered Ductile Irons	985
Nagayoshi, H.; Imanishi, K. Effect of Mg Content of Spheroidizer on Chilling Tendency of SG Melt	75
Naito, M.; Sugiura, T.; Hashimoto, K. Molding Properties of the Air-Flow Press Molding Process	699
Nastac, L.; Stefanescu, D.M. Simulation of Microstructure Evolution During Solidification of Inconel 718	425
Neltner, S.L.; LaFay, V.S.; Dempsey, Jr., T.C. Application of a Hotbox Sodium Silicate Binder to the Foundry Industry	837
Nichols, W.G.; Moynihan, G.P.; Batson, R.G.; Datta, D. Information Engineering Approach to Interpreting ISO 9000 Requirements to Foundry Operations	147
Nikolai, M.F. Effect of Metal Filtration on ASTM Test Bars	1017

Nishino, K.; Takamiya, H.; Awano, Y.; Genma, Y.; Suzuki, M. Effect of Alloying Elements on Properties of 16Cr Ferritic Heat-Resistant Cast Steel	245
Noguchi, T.; Shimizu, K.; Kamada, T.; Takasaki, H. Formation and Progression of Erosion Surface in Spheroidal Graphite Cast Iron	511
Nyamekye, K.; Wei, S.; Dillingham, J.; Jiranek, M.R.; Ramsay, C.W.; Askeland, D.R.; Pischel, R. Influence of Mold Coating on Heat Transport in Permanent Mold Casting Process	251
Nyamekye, K.; An, Y.-K. Using Rapid Modeling Technology in a Permanent Mold Casting Production Facility	395

O

Oh, J.K.; Cheon, B.W.; Hong, Y.M.; Choi, C.O. Properties of Sodium Silicate-Bonded Molding Sands With L-D Converter Slag Powder	571
Osseo-Asare, K.; Kaya, E.; Regan, Sr., R.W. Thermodynamic Equilibrium of Lead and Iron With Triple Superphosphate	651
Overfelt, R.A.; Bakhtiyarov, S.I. Study of Cohesive Flow in Fluidized Foundry Sands	705

P

Palukunnu, A.; Ramrattan, S.N.; Guichelaar, P.J.; Tieder, R. Study of Foundry Granular Media and Its Attrition	877
Pan, E.N.; Chen, C.Y. Effects of Bi and Sb on Graphite Structure of Heavy-Section Ductile Cast Irons	845
Pan, E.N.; Hu, J.F.; Fan, C.C. Solution-Treatment Conditions for Optimal Tensile Properties in A357 Alloy	1119
Pao, Y.H.; Cass, R.J.; LeClair, S.R. Optimized Recursive Foundry Tooling Fabrication Method	815
Pattabhi, R.; Lane, A.M.; Piwonka, T.S. Cast Iron Penetration in Sand Molds, Part III: Measurement of Mold-Metal Interfacial Gas Composition	1259
Pehlke, R.D.; Sun, H.; Mori, K. Chemical Reactions of Liquid Metal in Slag Layer and Well of Cupola, Part I: Development of Kinetic Model	595
Pehlke, R.D.; Sun, H.; Mori, K. Chemical Reactions of Liquid Metal in Slag Layer and Well of Cupola, Part II: Prediction of Metal Composition	605
Pekguleryuz, M.; Emadi, D.; Gruzleski, J.E. Melt Oxidation Behavior and Inclusion Content in Unmodified and Sr-Modified A356 Alloy— Their Role in Pore Nucleation	763
Peters, F.; Potter, L.A.; Voigt, R.C.; Lies, J.; Chandra, M.J. Statistically-Based Pattern Approval Process	307
Peters, F.E.; Valaga, R.; Voigt, R.C. Assessing Dimensional Repeatability of Metalcasting Processes	181
Pischel, R.; Wei, S.; Dillingham, J.; Jiranek, M.R.; Nyamekye, K.; Ramsay, C.W.; Askeland, D.R. Influence of Mold Coating on Heat Transport in Permanent Mold Casting Process	251
Piwonka, T.S.; D.M.; Giese, S.R.; Lane, A.M. Cast Iron Penetration in Sand Molds, Part I: Physics of Penetration Defects and Penetration Model	1233

Piwonka, T.S.; Giese, S.R.; Stefanescu, D.M.; Barlow, J. Cast Iron Penetration in Sand Molds, Part II: Experimental Evaluation of Some Main Parameters Responsible for Penetration	1249
Piwonka, T.S.; Pattabhi, R.; Lane, A.M. Cast Iron Penetration in Sand Molds, Part III: Measurement of Mold-Metal Interfacial Gas Composition	1259
Potter, L.A.; Voigt, R.C.; Peters, F.; Lies, J.; Chandra, M.J. Statistically-Based Pattern Approval Process	307
Prodhan, A.; Ghosh, S.; Chakrabarti, A.K.; Mohanty, O.N. Effect of Alloy Composition and Inoculation on Microstructure and Cracking Susceptibility of Aluminum Cast Irons	67

Q

Qian, M.; Zhaochang, W.; Harada, S. Initiation and Propagation of Microcracks in White Cast Irons Under Static Indentation Test	729
Quilling, F.A.; Loper, Jr., C.R.; Kristiansen, J.O.; Haase, A.L.; Bigge, R.H.; Krouse, R.S.; Chowdhury, A.K. Beneficial Reuse of Desulfurization Slag	29

R

Raman, K.S.; Murali, S.; Murthy, K.S.S. Al-7Si-0.3Mg Cast Alloy: A New Approach to Property Improvement	1175
Rammohan, N.; Spangler, K.R.; Atluri, R.; Creese, R.C. Metalcasting Benchmarking	1209
Ramrattan, S.N.; Singh, S.; Bringelson, L.; Ahire, S. Simulation of a Foundry Sand System	821
Ramrattan, S.N.; Guichelaar, P.J.; Palukunnu, A.; Tiedler, R. Study of Foundry Granular Media and Its Attrition	877
Ramsay, C.W.; Wei, S.; Dillingham, J.; Jiranek, M.R.; Nyamekye, K.; Askeland, D.R.; Pischel, R. Influence of Mold Coating on Heat Transport in Permanent Mold Casting Process	251
Ramsay, C.W.; Dillingham, J.; Askeland, D.R. Literature Review for Tenacious Coatings for Aluminum Permanent Mold Casting Process	1079
Rasmussen, N.W.; Hansen, P.N.; Andersen, U.; Andersen, M. High-Integrity Aluminum Casting in Flaskless Molds Made of Green Sand and Magnetite Ore	873
Rau, R.H.G.; Shivappa, D.N.; Subash Babu, A.; Bharati, K.B. Nonmetallic Inclusions in Steel Castings— A Case Study in Quality Engineering	171
Ravi, B.; Akarte, M.M. Casting Information Management	217
Ravindran, C.; Venkataramani, R. Effects of Coating Thickness and Pouring Temperature on Thermal Response in Lost Foam Casting	281
Ravindran, C.; Simpson, R. Solidification Process Modeling of Chills in LFC of A356 Alloy: Preliminary Study	1133
Ray, S.; Guo, R.Q.; Rohatgi, P.K. Casting Characteristics of Aluminum Alloy, Fly Ash Composites	1097
Ray, S.; Rohatgi, P.K.; Kim, J.K.; Sobczak, J.; Sobczak, N. Centrifugal Casting of Lead-Free Copper-Graphite Alloys	1217
Reddy, C.S.; Reddy, D.C. Development of Neural Network Methodology to Predict TTT Diagrams	191

Reddy, D.C.; Reddy, C.S. Development of Neural Network Methodology to Predict TTT Diagrams	191
Reddy, M.; Batson, R.G. Simulation of Metal Distribution Process in an Automated Pipe Shop	385
Redemske, J.; Chandley, D.; Mikkola, P.; Shah, R.C. Development of Thin-Wall Stainless Steel Castings Using Countergravity Process for Automobile Applications	903
Reed, W.P. Quality and the Development of Reference Materials, Including the Role of Traceability and Comparability	475
Regan, R.W.; Kauffmann, P.; Voigt, R.C. Survey of State Environmental Regulations Impacting Beneficial Reuse of Foundry Residuals	527
Regan, Sr., R.W.; Kaya, E.; Osseo-Asare, K. Thermodynamic Equilibrium of Lead and Iron With Triple Superphosphate	651
Rehbein, D.-H.; Wohlfahrt, H.; Ruge, J. Production of Weldable Al Diecastings— Requirements and Casting Technology	1195
Rickards, P.J.; Wickins, M. Recent Advances in Nondestructive Testing of Iron Castings	115
Riposan, I.; Chisamera, M.; Barstow, M. S-Inoculation of Mg-Treated Cast Iron to Obtain CG Cast Iron and Improve Graphite Nucleation in DI	581
Roberts, R.J. Larger-Scale Cold Crucible Melting of Titanium and Its Alloys	523
Roemer, Jr., C.W. TQM and the Office Staff	355
Rogers, J.D.; Cole, G.S.; Schuetzle, D.; Tomazewski, S.M.; Bindbeutel, M.; Haukula, B.; Eppley, D.; Walden, W.C.; Knight, S.M.; Dobitz, L. Casting Emissions Reduction Program (CERP)	539
Rohatgi, P.K.; Guo, R.Q.; Ray, S. Casting Characteristics of Aluminum Alloy, Fly Ash Composites	1097
Rohatgi, P.K.; Kim, J.K.; Sobczak, J.; Sobczak, N.; Ray, S. Centrifugal Casting of Lead-Free Copper-Graphite Alloys	1217
Rohatgi, P.K.; Saigal, A. Machinability of Cast Lead-Free Yellow Brass Containing Graphite Particles	225
Rouam, A.; Zerbin, S. New In-the-Mold Inoculation Process for the Production of Gray and Ductile Iron	5
Ruff, G.F. Cast Irons—The Glorious Past and Perilous Future	677
Ruge, J.; Wohlfahrt, H.; Rehbein, D.-H. Production of Weldable Al Diecastings— Requirements and Casting Technology	1195

S

Sablonniere (See: de la Sablonniere)	
Sahm, P.R.; Bührig-Polaczek, A.; Achten, M.; Zeuner, T.; Stojanov, P. Thixocasting and Low-Pressure/Counter-Pressure Diecasting: Processes for Production of High-Quality Casting of Al-Alloys	1103
Sahoo, M.; Mitrovic-Scepanovic, V.; Brigham, R. Corrosion Behavior of Sand-Cast Red Brass Containing Bi and Se	467

Sahoo, M.; Fasoyinu, F.A.; Dion, J.L.; Cousineau, D.; Bibby, C. Gravity Permanent Mold Casting of Graphite-Dispersed Copper-Base Alloys	415	Sharpless, R.Q. Induction Melting: Moving into the 21st Century	797
Sahoo, M.; Dion, J.L.; Fasoyinu, F.A.; Cousineau, D.; Bibby, C. Permanent Mold Casting of High-Conductivity Copper	405	Sheldon, D.; Littleton, H.E.; Miller, B.A.; Bates, C.E. Lost Foam Casting—Process Control for Precision	335
Saigal, A.; Rohatgi, P.K. Machinability of Cast Lead-Free Yellow Brass Containing Graphite Particles	225	Shih, T.-S.; Hwang, L.-R.; Hsiao, S.-S. Effect of Viscosity on Fluid Flow in Gating Systems	11
Samuel, A.M.; Samuel, F.H.; Doty, H.W. Factors Controlling the Type and Morphology of Cu-Containing Phases in 319 Al Alloy	893	Shih, T.-S.; Hwang, L.-R. Filling Phenomena and Accumulated Air Pressure in Mold Cavity of Top-Gated Systems	627
Samuel, F.H.; Samuel, A.M.; Doty, H.W. Factors Controlling the Type and Morphology of Cu-Containing Phases in 319 Al Alloy	893	Shih, T.-S.; Hsiao, S.-S.; Hong, C.-H. Movements of Vaporization Interface and Temperature Distributions in Green Sand Molds	481
Samuel, F.H.; Lee, F.T.; Major, J.F. Fatigue Crack Growth and Fracture Behavior of Al-12 Wt% Si-0.35 Wt% Mg (0-0.02) Wt% Sr Casting Alloys	785	Shih, T.-S.; Chau, S.Y.; Chang, C.H. Optimization of Austenitizing Treatment of Austempered Ductile Irons	557
Samuel, F.H.; de la Sablonniere, H. PoDFA Measurement of Inclusions in 319.1 Alloy: Effect of Mg (0.45 Wt%) Addition and Role of Sludge	751	Shih, T.-S.; Hwang, L.-R.; Hwang, M.-Y. Reaction Gases of Heated Green Sand Molds	825
Sanford, P.; Sibley, S.R. Optimization of Al Casting Productivity Using Foam Filter Technology and Application	1063	Shimizu, K.; Noguchi, T.; Kamada, T.; Takasaki, H. Formation and Progression of Erosion Surface in Spheroidal Graphite Cast Iron	511
Saran, T.N.; Mahesh, N.S.; Muralidhara, M.K.; Gopalakrishna, V. Investigation and Recommendation for Improvement of Mechanical Properties in Al-Cu-Ni-Zr Alloy (AA203.2)	1183	Shivappa, D.N.; Subash Babu, A.; Bharati, K.B.; Rau, R.H.G. Nonmetallic Inclusions in Steel Castings— A Case Study in Quality Engineering	171
Sasaguri, N.; Wu, H.-Q.; Matsubara, Y.; Hashimoto, M. Solidification of Multi-Alloyed White Cast Iron: Type and Morphology of Carbides	103	Shturmakov, A.J.; Granlund, M.J. Improving Quality of Iron and Steel Castings Made by Impact Molding Method	709
Sastry, B.V.S.K.; Basak, A. Welding and Brazing Characteristics of Austempered Ductile Irons	517	Siak, J.-S.; Whited, W.; Schreck, R.; Datte, M.; Biederman, S. Nontoxic, Recyclable, Core Sand Binder for Aluminum Castings	1213
Savage, W.; Bird, P. Rapid Induction Melting Lost Crucible (RIMLOC) Process	321	Sibley, S.R.; Sanford, P. Optimization of Al Casting Productivity Using Foam Filter Technology and Application	1063
Scarber, P.; Griffin, R.D.; Janowski, G.M.; Bates, C.E. Quantitative Characterization of Graphite in Gray Iron	977	Sigworth, G.K. Hot Tearing of Metals	1053
Schäfer, W.; Aagard, R.; Hattel, J.; Svensson, I.L.; Hansen, P.N. Simulation vs. Reality of an Industrial Ductile Iron Casting	659	Sikora, J.A.; Massone, J.M.; Boeri, R.E. Decomposition of High-Carbon Austenite in ADI	133
Schorn, T.J. Company Culture of TQM	211	Sikora, J.A.; Moncada, O.J. Dimensional Change in Austempered Ductile Iron	577
Schreck, R.; Siak, J.-S.; Whited, W.; Datte, M.; Biederman, S. Nontoxic, Recyclable, Core Sand Binder for Aluminum Castings	1213	Simpson, R.; Ravindran, C. Solidification Process Modeling of Chills in LFC of A356 Alloy: Preliminary Study	1133
Schuetzle, D.; Cole, G.S.; Rogers, J.D.; Tomazewski, S.M.; Bindbeutel, M.; Haukkala, B.; Eppley, D.; Walden, W.C.; Knight, S.M.; Dobitz, L. Casting Emissions Reduction Program (CERP)	539	Singh, S.; Ramrattan, S.N.; Bringelson, L.; Ahire, S. Simulation of a Foundry Sand System	821
Schürmann, E.; Hain, W. Contribution to Melting of Cast Iron in Cokeless, Natural Gas-Fired Cupola Furnace	693	Smalley, D.S. Electrical Shock Hazards as Applied to Induction Furnace Systems	615
Scott, W.D.; Vingas, G.J. Mold Wash Quality Control	551	Smiley, L.; Stanek, V.; Katz, S.; Landefeld, C. Applications of AFS/DoE Cupola Model	1223
Scrimshire, D. Future of ISO 9000-Based Standards	167	Sobczak, J.; Rohatgi, P.K.; Kim, J.K.; Sobczak, N.; Ray, S. Centrifugal Casting of Lead-Free Copper-Graphite Alloys	1217
Scrimshire, D. ISO 14001: The International Standard for Environmental Management Systems	325	Sobczak, N.; Rohatgi, P.K.; Kim, J.K.; Sobczak, J.; Ray, S. Centrifugal Casting of Lead-Free Copper-Graphite Alloys	1217
Shabestari, S.G.; Kulunk, B.; Gruzleski, J.E.; Zuliani, D.J. Beneficial Effects of Strontium on A380 Alloy	1189	Spangler, K.R.; Rammohan, N.; Atluri, R.; Creese, R.C. Metalcasting Benchmarking	1209
Shah, R.C.; Chandley, D.; Redemske, J.; Mikkola, P. Development of Thin-Wall Stainless Steel Castings Using Countergravity Process for Automobile Applications	903	Sparkman, D.A.; Bhaskaran, C.A. Chill Measurement by Thermal Analysis	969
		Stanek, V.; Katz, S.; Landefeld, C.; Smiley, L. Applications of AFS/DoE Cupola Model	1223
		Staral, R.; Kaczmarek, E.R.; Heine, R.W. Silicon Recovery, Silicon Charged, Silicon Oxidation and Slag Silica Analyses in Acid Cupola Melting	683

Stefanescu, D.M.; Giese, S.R.; Piwonka, T.S.; Lane, A.M. Cast Iron Penetration in Sand Molds, Part I: Physics of Penetration Defects and Penetration Model	1233
Stefanescu, D.M.; Giese, S.R.; Barlow, J.; Piwonka, T.S. Cast Iron Penetration in Sand Molds, Part II: Experimental Evaluation of Some Main Parameters Responsible for Penetration	1249
Stefanescu, D.M.; Nastac, L. Simulation of Microstructure Evolution During Solidification of Inconel 718	425
Stojanov, P.; Sahm, P.R.; Bührig-Polaczek, A.; Achten, M.; Zeuner, T. Thixocasting and Low-Pressure/Counter-Pressure Diecasting: Processes for Production of High-Quality Casting of Al-Alloys	1103
Subash Babu, A.; Shivappa, D.N.; Bharati, K.B.; Rau, R.H.G. Nonmetallic Inclusions in Steel Castings— A Case Study in Quality Engineering	171
Subramanian, S.V.; Genualdi, A.J. Optimization of Damping Capacity and Strength in Hypereutectic Gray Cast Iron	995
Suchy, J.S.; Mochnecki, B. Numerical Modeling of Casting Solidification: The Concept of Problem Linearization	203
Sugiura, T.; Hashimoto, K.; Naito, M. Molding Properties of the Air-Flow Press Molding Process	699
Sugra, R.F. Price Response Service: An Opportunity for the Foundry Industry	379
Sun, G.X.; Yao, R.B.; Tang, C.X. Predicting Gray Cast Iron Properties With Artificial Neural Network	635
Sun, H.; Mori, K.; Pehlke, R.D. Chemical Reactions of Liquid Metal in Slag Layer and Well of Cupola, Part I: Development of Kinetic Model	595
Sun, H.; Mori, K.; Pehlke, R.D. Chemical Reactions of Liquid Metal in Slag Layer and Well of Cupola, Part II: Prediction of Metal Composition	605
Sun, Y.; Tsai, H.L.; Askeland, D.R. Effects of Silicon Content, Coating Materials and Gating Design on Casting Defects in the Aluminum Lost Foam Process	271
Suzuki, M.; Nishino, K.; Takamiya, H.; Awano, Y.; Genma, Y. Effect of Alloying Elements on Properties of 16Cr Ferritic Heat-Resistant Cast Steel	245
Svensson, I.L.; Aagard, R.; Hattel, J.; Schäfer, W.; Hansen, P.N. Simulation vs. Reality of an Industrial Ductile Iron Casting	659
Sweeney, E.T.; Er, A.; Kondic, V. Knowledge-Based System for Casting Process Selection	363

T

Takamiya, H.; Nishino, K.; Awano, Y.; Genma, Y.; Suzuki, M. Effect of Alloying Elements on Properties of 16Cr Ferritic Heat-Resistant Cast Steel	245
Takasaki, H.; Shimizu, K.; Noguchi, T.; Kamada, T. Formation and Progression of Erosion Surface in Spheroidal Graphite Cast Iron	511
Talwar, V.; Tordoff, W.G.; Wolfram, T.; Hysell, M. Carbon Pickup in Steel: A Study of Various Nobake Binders and Sand Additives	461
Tandon, L.C. Converting Steel and Gray Iron to Ductile Iron	51

Tang, C.X.; Yao, R.B.; Sun, G.X. Predicting Gray Cast Iron Properties With Artificial Neural Network	635
Tieder, R.; Ramrattan, S.N.; Guichelaar, P.J.; Palukunnu, A. Study of Foundry Granular Media and Its Attrition	877
Tincu, R.D. Producing Tomorrow's Molds with Abraded Electrodes and EDM	303
Tiroler, Z. Two-Year Campaign for a Better Work Environment	809
Tiryakioglu, M.; Campbell, J.; Green, N.R. Review of Reliable Processes for Aluminum Aerospace Castings	1069
Tomazewski, S.M.; Cole, G.S.; Schuetzle, D.; Rogers, J.D.; Bindbeutel, M.; Haukkala, B.; Eppley, D.; Walden, W.C.; Knight, S.M.; Dobitz, L. Casting Emissions Reduction Program (CERP)	539
Tordoff, W.G.; Wolfram, T.; Talwar, V.; Hysell, M. Carbon Pickup in Steel: A Study of Various Nobake Binders and Sand Additives	461
Townsend, D.E.; Christensen, H.J.; Hughey, J.E. Improving Iron Control Through Automated Ladle Additions	97
Trudel, A.; Gagné, M.; Lavallée, F. Counteracting the Effect of Steel Scrap Residuals in Ductile Iron Castings	123
Tsai, H.L.; Chen, J.H. Effect of Rising Design on Fluid Flow and Solidification Patterns During Casting Solidification	371
Tsai, H.L.; Sun, Y.; Askeland, D.R. Effects of Silicon Content, Coating Materials and Gating Design on Casting Defects in the Aluminum Lost Foam Process	271
Tsai, H.L.; Fu, J.; Askeland, D.R. Transport of Foam Decomposition Products into the Sand in the Lost Foam Casting Process	263

U

Ulfers, H.M.; Highfield, J.W. Processing Foundry Sands at John Deere: Turning Waste Management into Asset Management	717
--	-----

V

Valaga, R.; Peters, F.E.; Voigt, R.C. Assessing Dimensional Repeatability of Metalcasting Processes	181
Venkataramani, R.; Ravindran, C. Effects of Coating Thickness and Pouring Temperature on Thermal Response in Lost Foam Casting	281
Vingas, G.J.; Scott, W.D. Mold Wash Quality Control	551
Voigt, R.C.; Peters, F.E.; Valaga, R. Assessing Dimensional Repeatability of Metalcasting Processes	181
Voigt, R.C.; Potter, L.A.; Peters, F.; Lies, J.; Chandra, M.J. Statistically-Based Pattern Approval Process	307
Voigt, R.C.; Kauffmann, P.; Regan, R.W. Survey of State Environmental Regulations Impacting Beneficial Reuse of Foundry Residuals	527
Volkmar, A.P. Twenty-Five Years of Green Sand Control	1269
Vondra, L.F.; Formanek, M.C. Further Evaluation of Wear Analysis of Selected Tooling Materials Using Impact Abrasion Testing	317

W

- Walden, W.C.; Cole, G.S.; Schuetzle, D.; Rogers, J.D.;
Tomazewski, S.M.; Bindbeutel, M.; Haukkala, B.;
Eppley, D.; Knight, S.M.; Dobitz, L.
Casting Emissions Reduction Program (CERP) 539
- Wang, Q.G.; Caceres, C.H.
Solidification Conditions, Heat Treatment and Tensile
Ductility of Al-7Si-0.4Mg Casting Alloys 1039
- Wang, V.W.; Mako, G.J.; Matthews, A.L.
Pressed Cellular Filter Application in an Aluminum Foundry 1045
- Wei, S.; Dillingham, J.; Jiranek, M.R.; Nyamekye, K.;
Ramsay, C.W.; Askeland, D.R.; Pischel, R.
Influence of Mold Coating on Heat Transport
in Permanent Mold Casting Process 251
- Whited, W.; Siak, J.-S.; Schreck, R.; Datte, M.; Biederman, S.
Nontoxic, Recyclable, Core Sand
Binder for Aluminum Castings 1213
- Wickins, M.; Rickards, P.J.
Recent Advances in Nondestructive Testing of Iron Castings 115
- Wilson, V.E.; Gurdogan, O.; Huang, H.;
Akay, H.U.; Fincher, W.W.
Mold-Filling Analysis for Ductile Iron Lost Foam Castings 451
- Winters, D.L.; Jacobs, M.L.; Kaschemekat, J.
Methyl Formate Recovery in Ester-Cured Phenolic
Coldbox Process, Using Membrane Technology 923
- Wistehuff, G.; Gross, M.J.; Colthurst, H.; Askeland, D.R.
Effects of Mg, Ce, Ca, S and La on Graphite Stability
in DI During Extended Holding 497
- Wohlfahrt, H.; Ruge, J.; Rehbein, D.-H.
Production of Weldable Al Diecastings—
Requirements and Casting Technology 1195
- Wolfram, T.; Tordoff, W.G.; Talwar, V.; Hysell, M.
Carbon Pickup in Steel: A Study of Various
Nobake Binders and Sand Additives 461
- Wu, H.-Q.; Sasaguri, N.; Matsubara, Y.; Hashimoto, M.
Solidification of Multi-Alloyed White Cast Iron:
Type and Morphology of Carbides 103
- Wu, J.; Jiang, J.; Yang, G.; Xie, B.
Application of FEM to Predict Hardness Distribution
of Air-Impact, Compacted Green Sand Molds 491
- Wukovich, N.
A Short History of the Steel Foundry 643

X

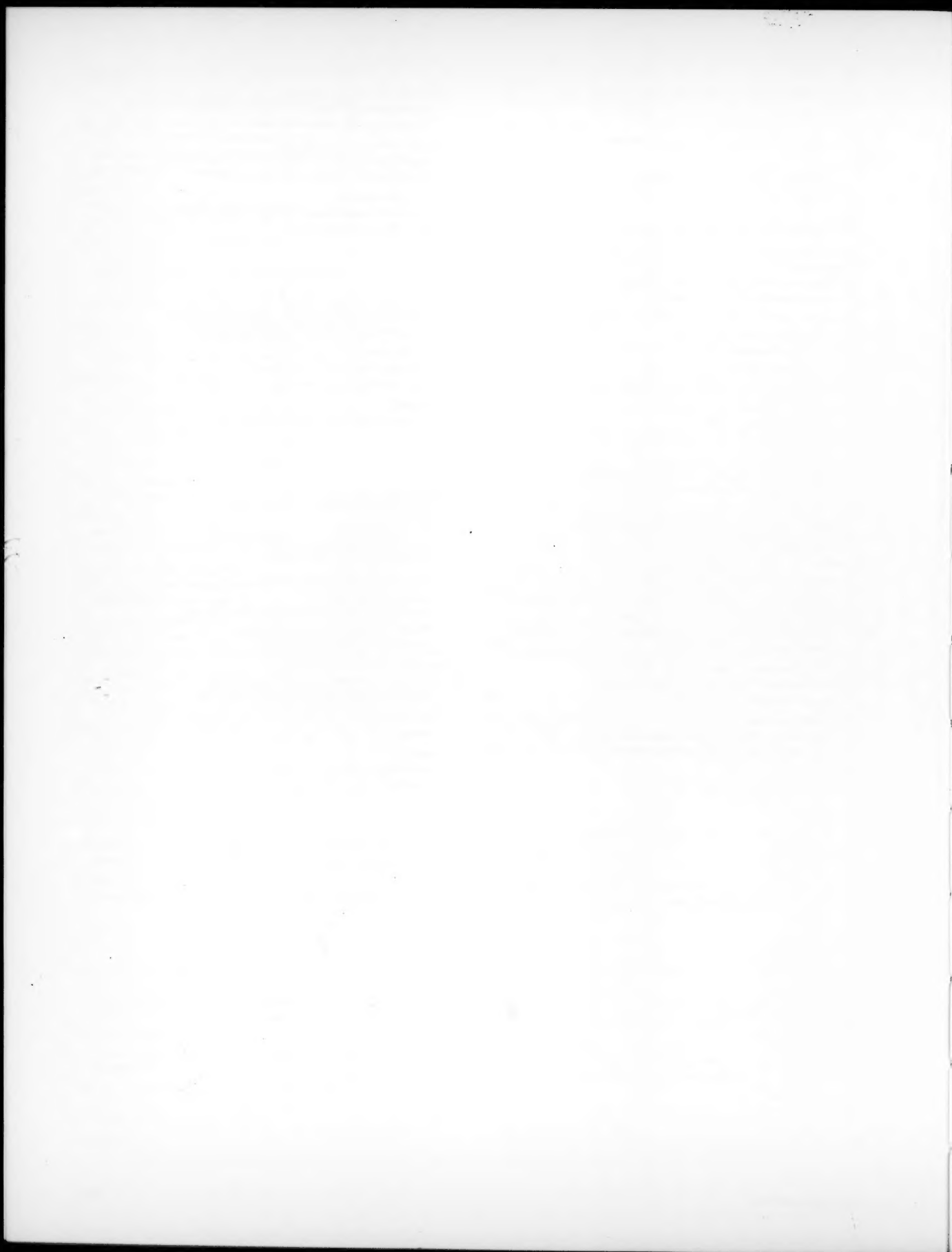
- Xiaozhong, X.; Jun, C.; Hong, X.
Development and Practice of Three-Dimensional
Solidification Simulation Software 435
- Xie, B.; Wu, J.; Jiang, J.; Yang, G.
Application of FEM to Predict Hardness Distribution
of Air-Impact, Compacted Green Sand Molds 491
- Xu, Z.A.; Mampaey, F.
Experimental and Simulation Study on Mold Filling
With Various Gating Systems 155

Y

- Yang, G.; Wu, J.; Jiang, J.; Xie, B.
Application of FEM to Predict Hardness Distribution
of Air-Impact, Compacted Green Sand Molds 491
- Yao, R.B.; Tang, C.X.; Sun, G.X.
Predicting Gray Cast Iron Properties
With Artificial Neural Network 635
- Young, R.A.
Formal Quality Systems in the Pattern Shop 347

Z

- Zbiegien, Sr., J.A.
Operations Technology for Demand Flow 291
- Zerbin, S.; Rouam, A.
New In-the-Mold Inoculation Process for the
Production of Gray and Ductile Iron 5
- Zeuner, T.; Sahm, P.R.; Bührig-Polaczek, A.;
Achten, M.; Stojanov, P.
Thixocasting and Low-Pressure/Counter-Pressure
Diecasting: Processes for Production of
High-Quality Casting of Al-Alloys 1103
- Zhaochang, W.; Qian, M.; Harada, S.
Initiation and Propagation of Microcracks in
White Cast Irons Under Static Indentation Test 729
- Zuliani, D.J.; Kulunk, B.; Shabestari, S.G.; Gruzleski, J.E.
Beneficial Effects of Strontium on A380 Alloy 1189
- Zurecki, Z.; Best, R.C.
Development of Gas-Swirling Method for
Inerting Metals in Melting Furnaces 859



Subject Index

A

ADI. *See*: Austempered ductile iron

Aluminum and aluminum alloys

- analysis of fatigue crack growth 785
- casting in flaskless green sand and magnetite molds 873
- effect of 0.45% Mg 751
- effect of freezing rate on ductility 1039
- effect of oxidation and inclusions on pore nucleation 763
- effect of process variables in V-process 1143
- effect of solution treatment on tensile properties of A357 1119
- effect of strontium on A380 1189
- effects of Si, coating and gating on defects in LFC 271
- factors affecting drying of sprayed mold coatings 769
- fatigue design improvement 445
- feeding behavior in Al-Si alloys 743
- feeding criteria for porosity formation 545
- filtration of inclusions 751
- fluidity of A356.2 fly ash composites 1097
- foam filter technology 1063
- future trends for high-production diecasting 957
- heat treatment of squeeze-cast MMCs 1171
- hot tearing, liquid embrittlement 1053
- hypereutectic Al-Si casting alloys, 25 year review 669
- improving mechanical properties in AA203.2 1183
- interdendritic feeding evaluation of A356 1151
- nontoxic, recyclable core sand binder 1213
- optimization of low-pressure diecasting 1111
- pressed cellular filter application 1045
- production of weldable Al diecastings 1195
- property improvement of Al-Mg alloy 1175
- reliability of aerospace castings 1069
- role in transportation industry 673
- role of sludge 751
- solidification of Al-Si strip casting 735
- solidification modeling of A356.2 1203
- solidification modeling with chills in A356 LFC 1133
- solution heat treatment of 354 and 355 alloys 777
- squeeze-cast ZA alloys 1159
- tensile fracture behavior in 354 and 355 alloys 887
- thermal spray coatings for permanent mold castings 1079
- thixocasting and low-pressure/counter-pressure diecasting 1103
- type and morphology of Cu-containing phase in 319 alloy 893

Artificial intelligence

- knowledge-based system for casting process selection 363
- neural network method to predict TTT diagrams 191
- predicting compactibility and strength by process control in green sand 1003
- predicting mechanical properties in gray iron 635

Austempered ductile iron (ADI)

- decomposition of high-carbon austenite 133
- dimensional change caused by heat treatment 577
- effect of higher service temperatures on mechanical properties 985
- optimization of austenitizing treatment 557
- welding and brazing of 517

B

Ballistics

- evaluation of cast iron 33
- evaluation of malleable and ductile 41

Benchmarking for the metalcasting industry 1209

Binders

- improved release properties 945
- improved technologies for safer environment 929
- nontoxic, recyclable core sand binder 1213
- reduced CFCs in binders 937
- study of carbon pickup in steel 461
- use of hotbox sodium silicate binders 837
- use of slag powder to harden molds 571

Boron

- wear properties of austempered boron cast irons 109

Brasses

- machinability of cast lead-free yellow brass containing graphite particles 225

Brazing

- characteristics of in ductile iron 517

C

Carbides

- structure in white cast iron 103

Carbon

- pickup in steel 461

Carbon equivalent (CE)

- effect on eutectic start temperature 75
- effect on Ti alloying in PM castings 1011

Cast iron

- accurate determination of Young's modulus and yield strength 721
- adding ductile to gray iron foundry 1275
- automatic ladle additions in gray iron 97
- ballistic evaluation of malleable and ductile 41
- ballistic evaluation of ten different materials 33
- beneficial reuse of slag 29
- brake rotor metallurgy 19
- carbides and morphology 103
- chill measurement by thermal analysis 969
- computer analysis of melting cost data 589
- converting steel and gray to ductile 51
- counteracting effect of steel scrap residual 123
- damping capacity and strength in hypereutectic gray iron 995
- decomposition of high-carbon austenite in ADI 133
- defects in DI castings 89
- effect of alloy composition and inoculation 67
- effect of higher service temperatures on mechanical properties 985
- effect of metal filtration on ASTM test bars 1017
- effect of Mg spheroidizer 75
- effects of Bi and Sb on graphite structure 845
- effects of various elements on graphite stability during holding 497

filling phenomena and accumulated air pressure	
in mold cavity of top-gated systems	627
formation of erosion surface	511
fracture behavior in white cast irons	729
in-the-mold inoculation	5
measurement of mold-metal interfacial gas composition	1259
mechanical properties and machinability of	
Si-solution-hardened ferritic DI	139
melting of cast iron in cokeless, natural	
gas-fired cupola furnace	693
micromagnetic testing for chill tendency	1031
nondestructive testing	115
parameters responsible for penetration in sand molds	1249
past and future of industry	677
penetration physics and modeling in sand molds	1233
predicting properties with artificial intelligence	635
quantitative characterization of graphite flakes	977
site theory proposal	79
sulfur inoculation of Mg-treated iron	581
Ti effect on gray iron PM castings	1011
use of infrared temperature measuring system	439
use of refractory cloth filters	57
viscosity of fluid flow in gating	11
wear properties of austempered boron cast irons	109
CE. See: Carbon equivalent	
Centrifugal casting	
lead-free Cu-graphite alloys	1217
simulation of metal distribution for pipemaking	385
Chill testing	
chill measurement by thermal analysis in cast iron	969
Chilling detection by micromagnetics	1031
Coatings	
control of coating permeability in LFC	565
controlling refractory coating quality	551
effect of continuous mixing on viscosity	
and permeability in LFC	329
effect on heat transfer in PM castings	251
effect of thickness in LFC	281
effects of Si, coating and gating on defects in LFC	271
factors affecting drying of sprayed mold coatings	769
thermal spray coatings for Al permanent mold castings	1079
Coke/coal	
detection of benzene potential	865
Computer applications	
analysis of melting cost data	589
economical operation of cupola melting	1223
effect of rising design on fluid flow and solidification	371
hardness prediction by FEM	491
information management	217
kinetic model for predicting chemical reactions in a cupola	595
knowledge-based system for casting process selection	363
mathematical model for predicting metal	
composition in a cupola	605
metal distribution for pipemaking	385
modeling heat transport in PM castings	251
modeling of green sand molds	481
neural network method to predict TTT diagrams	191
numerical modeling of solidification	203
partial-cell simulation of mold filling	197
predicting soundness of Al-11%Si Castings	1143
prediction of graphite eutectic grains	1
production modeling technology	395
simulation of foundry sand system	821
simulation of microstructure evolution of Inconel 718	425
solidification modeling of A356.2	1203
solidification simulation of DI castings	659
3-D solidification simulation software	435
Cooling rate	
effect of Mg spheroidizer in SG cast iron	75

effect on ductility in aluminum castings	1039
Copper-base alloys	
centrifugal casting of lead-free Cu-graphite alloys	1217
corrosion behavior of sand-cast red brass	
containing Bi and Se	467
credibility of measurement systems	475
graphite-dispersed PM castings	415
machinability of cast lead-free yellow brass	
containing graphite particles	225
permanent mold casting of high-conductivity copper	405
Cores	
air flow variations in a corebox	951
emissions reduction program	539
fluidization of sand during coremaking	705
improved release properties	945
Corrosion	
behavior in copper-base alloy castings	467
Countergravity process	
used for stainless steel automotive castings	903
Cupola	
economical operation of cupola melting	1223
kinetic model for predicting chemical reactions in a cupola	595
mathematical model for predicting metal	
composition in a cupola	605
melting of cast iron in cokeless, natural gas-fired furnace	693
slag analysis of silica content	683

D

Defects. See also specific type of defect

due to gas evolution in LFC	263
effects of Si, coating and gating on defects in LFC	271
NDT, recent advances for iron castings	115
porosity and dirt in DI castings	89

DI. See: Ductile iron

Diecasting

effect of strontium on A380	1189
future trends for aluminum foundries	957
low-pressure, counter-pressure, gravity	
and squeeze casting	1111
production of weldable Al diecastings	1195
thixocasting, low-pressure and counter-pressure	1103

Dimensional tolerance

assessing dimensional repeatability	181
-------------------------------------	-----

Ductile iron (DI)

accurate determination of Young's modulus	
and yield strength	721
adding ductile to gray iron foundry	1275
converting steel to ductile	51
counteracting effect of steel scrap residual	123
defects in DI castings	89
LFC mold-filling analysis	451
mechanical properties and machinability of	
Si-solution-hardened ferritic DI	139
solidification simulation of DI castings	659
sulfur inoculation of Mg-treated iron	581

E

Economics

computer analysis of melting cost data	589
evaluation of metalcasters	1209
molding techniques for high-production foundries	957

Environmental concerns

beneficial reuse of slag	29
binders, improved technology	929
case history of sand reclamation	717
emissions reduction program	539

graphite-dispersed particles in brass as alternative in plumbing fixtures	415
implementing ISO 14001	325
methyl formate recovery in sand systems	923
molding techniques for high-production foundries	957
nontoxic, recyclable core sand binder	1213
pollution prevention options	917
project to improve work environment, case history	809
survey of state regulations for foundry residuals	527
urethane coldbox binders with less CFCs	937
use of low-odor, low-free formaldehyde in steel castings	461
use of triple superphosphate to treat wastewater and sludge	651
EPS. <i>See</i> : Expandable polystyrene	
Ergonomics	
project to improve work environment, case history	809
Expandable polystyrene (EPS)	
foam pattern resistance and degradation	451
F	
Fatigue crack growth	
analysis of in Al alloys	785
Feeding	
behavior in modified and unmodified Al-Si alloys	743
criteria for porosity formation in A356	545
high-integrity Al casting in green sand	873
interdendritic and channel mechanisms in A356 alloy	1151
solidification modeling of A356.2	1203
viscosity of fluid flow in gating	11
FEM. <i>See</i> : Finite element method	
Filtration of molten metal	
effect on ASTM test bars	1017
flow rates through refractory cloth filters	57
in-the-mold inoculation of gray and ductile irons	5
pressed cellular filter application in Al castings	1045
use of porous disc	751
Finite element method (FEM)	
hardness prediction of green sand molds	491
Fluidity	
effect of Mg in A319.1 alloy	751
in A356.2 fly ash composites	1097
permanent mold high-conductivity copper	405
Fly ash	
effect on fluidity in A356.2 Al castings	1097
Fracture toughness	
fatigue design for Al castings	445
improvement in Al-Mg alloys, using beryllium	1175
microcracks in white cast iron	729
tensile fracture behavior in 354 and 355 alloys	887
Furnace	
history of steel foundry	643
melting of cast iron in cokeless, natural gas-fired cupola	693
preventing electrical shock hazards in induction furnaces	615
science of batch induction melting	229
use of induction ladle furnace as a melting tool	805
variable frequency induction melting	797
G	
Gage R&R	
assessing dimensional repeatability	181
statistically-based pattern approval process	307
Gas-swirling method for inerting metals	859
Gating	
loss coefficient and filling phenomena	627
Graphite	
effects of various elements on graphite stability in DI during holding	497

graphite-dispersed brass castings	415
improving nucleation in DI	581
quantitative characterization of graphite flakes in cast iron	977
Graphite morphology	
damping capacity and strength in hypereutectic gray iron	995
effects of Bi and Sb on graphite structure in cast iron	845
in gray cast iron	1
Gray iron	
adding ductile to gray iron foundry	1275
automatic ladle additions in gray iron	97
converting to ductile iron	51
damping capacity and strength in hypereutectic gray iron	995
solidification to predict graphite morphology	1
Ti effect on gray iron PM castings	1011
use of infrared temperature measuring system	439
Green sand	
gas analysis in heated molds	825
high-integrity Al casting	873
predicting compactibility and strength by process control	1003
twenty-five years of green sand control	1269

H

Hardness testing	
indentation test for microcracks in white cast iron	729
Heat transfer	
effect of mold coatings in PM castings	251
effects of coating thickness and pouring temperature in LFC	281
Heat treatment	
damping capacity and strength in hypereutectic gray iron	995
effect on alloy AA203.2	1183
effect on dimensional changes in ADI	577
effect on ductility in aluminum castings	1039
effect on fracture toughness in 354 and 355 Al alloys	887
effect on squeeze-cast MMCs	1171
effect on tensile properties of A357	1119
optimization of austenitizing treatment in ADI	557
solution treatment of 354 and 355 Al alloys	777
HIP. <i>See</i> : Hot isostatic pressing	
Honorary Lecture, Div. 5.	
past and future of cast iron industry	677
Hot isostatic pressing (HIP)	
decreasing shrinkage in Al aerospace castings	1069
Hot tearing of metals	1053
Hoyt Memorial Lecture	
role of casting technology in the transportation industry	673
Hydrogen	
avoidance of H pickup in green sand	873

I

Inclusions	
effect of Mg in A319.1 alloy	751
effect on porosity in A356 alloys	763
Inerting metals by use of gas-swirling method	859
Infrared temperature measuring system	439
Investment casting	
evaluation of Mg-base alloys	237
Iron and iron alloys	
improved quality using impact molding process	709
ISO requirements	
information engineering approach to interpretation	147
future of standards	167

K

Knowledge-based systems	
use of for casting process selection	363

L

Ladle

- automatic ladle additions in gray iron 97
- effect of lining on nonmetallic inclusions 171

Lead

- centrifugal casting of lead-free Cu-graphite alloys 1217
- credibility of measurement systems 475
- graphite-dispersed particles in brass as alternative in plumbing fixtures 415
- machinability of cast lead-free yellow brass containing graphite particles 225
- use of triple superphosphate to treat wastewater and sludge 651

LFC. See: Lost foam casting

Lost foam casting (LFC)

- control of coating permeability 565
- effect of continuous mixing on viscosity and permeability of coatings 329
- effects of coating thickness and pouring temperature on thermal response 281
- effects of Si, coating and gating on defects 271
- foam decomposition products into sand 263
- mold-filling analysis for DI 451
- process control for precision 335
- solidification modeling with chills in A356 LFC 1133
- vibratory compaction of sand 619

M

Machinability

- mechanical properties of Si-solution-hardened ferritic DI 139
- of cast lead-free yellow brass containing graphite particles 225

Management/marketing

- adding ductile to gray iron foundry 1275
- applying QC principles to office staff 355
- company culture of TQM 211
- European foundry R&D 1265
- evaluation of metalcasting industry 1209
- future of Chinese foundry industry 297
- implementing ISO 14001 325
- implementing QS 9000 351
- new pricing concept for electrical energy 379
- operations technology for demand flow 291

Measurement systems and their credibility

475

Mechanical properties

- decomposition of high-carbon austenite in ADI 133
- effect of alloying elements in 16Cr steel 245
- effect of higher service temperatures in ADI 985
- improvement of, using beryllium 1175
- machinability of Si-solution-hardened ferritic DI 139
- predicting with artificial intelligence 635
- recommendations for improving in AA203.2 1183
- squeeze-cast ZA alloys 1159

Melting

- cast iron in cokeless cupola 693
- cold crucible melting of titanium 523
- computer analysis of melting cost data 589
- economical operation of cupola melting 1223
- history of steel foundry 643
- kinetic model for predicting chemical reactions in a cupola 595
- mathematical model for predicting metal composition in a cupola 605
- new gas-swirling method for inerting metals 859
- new pricing concept for electrical energy 379
- oxidation of Mg-base alloys 237
- preventing electrical shock hazards 615
- rapid induction, lost crucible method 321

- recovery of silicon 683
- science of batch induction melting 229
- use of induction ladle furnace as a melting tool 805
- variable frequency induction furnace 797

Metal matrix composites (MMC)

- heat treatment of squeeze-cast alloys 1171
- thixocasting and low-pressure/counter-pressure Al diecasting 1103

Microstructure

- aluminum cast irons 67
- metallurgical quality index (MQI) evaluation 19
- simulation of during solidification of Inconel 718 425

MMC. See: Metal matrix composites

Mold filling

- air pressure in top-gated systems 627
- control of coating permeability in LFC 565
- in-the-mold inoculation of gray and ductile irons 5
- modeling of DI lost foam castings 451
- partial-cell method of simulation 197
- pressed cellular filter application in Al castings 1045
- simulation of foam filter technology 1063
- simulation with various gating systems 155
- solidification modeling with chills in A356 1133
- viscosity of fluid flow in gating 11

N

NDT. See: Nondestructive testing

Nodule count

- effects of various elements on graphite stability in DI during holding 497

Nondestructive testing (NDT)

- micromagnetic testing for chill tendency 1031
- recent advances for iron castings 115

Nucleation

- site theory proposal in cast iron 79

Numerical simulation

- metal distribution for pipemaking 385
- microstructure evolution during solidification of Inconel 718 425
- modeling of casting solidification 203
- mold filling with various gating systems 155
- partial-cell simulation of mold filling 197
- sand compaction observation 619
- solidification modeling of A356.2 1203
- 3-D solidification software 435

P

Patternmaking

- assessing dimensional repeatability 181
- electrical discharge machining and abraded electrodes 303
- evaluation of tooling materials 317
- implementing a quality system 347
- optimized recursive foundry tooling 815
- process control for precision in LFC 335
- statistically-based pattern approval process 307
- use of computerized information management 217

Penetration defect

- measurement of mold-metal interfacial gas composition 1259
- parameters responsible for in cast iron sand molds 1249
- physics and modeling in cast iron sand molds 1233

Permanent mold (PM)

- casting of graphite-dispersed Cu-base alloys 415
- casting of high-conductivity copper 405
- electrical discharge machining and abraded electrodes 303
- factors affecting drying of sprayed mold coatings 769

influence of mold coating on heat transport	251	impact molding method	709
simulation of foam filter technology	1063	improved release properties	945
thermal spray coatings for Al castings	1079	measurement of mold-metal interfacial gas composition	1259
Ti effect on gray iron PM castings	1011	modeling of green sand molds	481
PM. See: Permanent mold		parameters responsible for penetration in cast iron	1249
Pollution		penetration physics and modeling in cast iron	1233
beneficial reuse of slag	29	properties of air-flow press molding process	699
Porosity		reaction gases in heated molds	825
control of in Al-Si alloys	743	use of hotbox sodium silicate binders	837
effect of strontium on A380	1189	use of slag powder to harden molds	571
formation in A356 sand plate castings	545	vibratory compaction in LFC	619
in ductile iron castings	89	Sand reclamation	
prevention of microporosities in DI castings	659	pollution prevention options	917
result of oxidation and inclusions in A356 alloys	763	survey of state regulations	527
Pouring		turning waste into assets	717
effect of cup on nonmetallic inclusions	171	SG. See: Spheroidal graphite	
Process Control		Shrinkage	
predicting compactibility and strength in green sand	1003	caused by oxide film in Al castings	1069
Production scheduling		Silicon	
operations technology for demand flow	291	recovery in ductile iron	683
use of rapid modeling technology	395	Silver Anniversary Papers	
		25 years of hypereutectic Al-Si casting alloys (Div. 2)	669
		25 years of green sand control (Div. 4)	1269
Q		Slag	
Quality control		analysis of silica content	683
applying good management principles to office staff	355	Solidification	
cast iron brake rotor metallurgy	19	Al-Si strip casting	735
controlling refractory coating quality	551	effect of risering design	371
implementing QS 9000	351	effects of chemical composition and cooling rate	907
TQM culture	211	graphite morphology in gray cast iron	1
use of system in pattern shop	347	microstructure evolution of Inconel 718	425
		modeling of A356.2	1203
R		modeling with chills in A356 LFC	1133
Rapid prototyping		numerical simulation and linearization	203
electrical discharge machining and abraded electrodes	303	solidification simulation of DI castings	659
optimized recursive foundry tooling	815	3-D simulation of software	435
Risening		type and morphology of Cu-containing phase in 319 alloy	893
effect of fluid flow and solidification	371	Spheroidal graphite (SG)	
		site theory proposal in cast iron	79
S		Squeeze casting	
Safety		evaluation of ZA alloys	1159
preventing electrical shock hazards	615	heat treatment of Al MMCs	1171
project to improve work environment, case history	809	optimization of low-pressure diecasting	1111
Sand		properties of air-flow press molding process	699
control of volatile organic compounds	923	Steel	
detection of benzene potential	865	carbon pickup with various binders	461
environmentally improved binders	929	converting to ductile iron	51
evaluation of high-performance urethane coldbox binder	937	countergravity process used in automotive castings	903
granular media and its attrition	877	effect of alloying elements on 16Cr steel	245
nontoxic, recyclable core sand binder	1213	effects of various factors on DAS and morphology	907
predicting compactibility and strength by process control	1003	foundry history	643
silica sand alternatives	877	improved quality using impact molding method	709
simulation of foundry sand system	821	nonmetallic inclusions	171
twenty-five years of green sand control	1269	predicting TTT diagrams	191
Sand casting		simulation of microstructure evolution during solidification of Inconel 718	425
corrosion behavior of copper-base alloys	467	Stereolithography (STL)	
Sand molding		electrical discharge machining and abraded electrodes	303
air flow variations in a corebox	951	optimized recursive foundry tooling	815
Al casting in flaskless green sand and magnetite molds	873	STL. See: Stereolithography	
channeling and fluidization	705	Strip casting	
chemically-bonded core molds	957	solidification structure	735
controlling refractory coating quality	551	Strontium	
emissions reduction program	539	effect on A380	1189
hardness prediction by FEM	491	modification in Al-Si alloys	743
history of steel foundry	643	Surface finish	
		effect of process variables in Al alloy	1143

T

Tensile properties	
effect of heat treatment in A357	1119
Testing	
effect of metal filtration on ASTM test bars	1017
history of steel foundry	643
hot tearing, liquid embrittlement	1053
impact abrasion testing of selected tooling materials	317
Thermal analysis	
chill measurement in cast iron	969
use of infrared temperature measuring system in cast iron	439
Thixocasting and low-pressure/counter-pressure diecasting	1103
Titanium	
cold crucible melting of	523
Tolerances	
statistically-based pattern approval process	307
Tooling	
impact abrasion testing of selected materials	317
process control for precision in LFC	335
Total quality management (TQM)	
company culture of TQM explained	211
TQM. <i>See</i> : Total quality management	

V

Vacuum process	
surface finish and soundness in Al castings	1143

W

Wear resistance	
evaluation of tooling materials	317
formation of erosion surface in cast iron	511
in austempered boron cast iron	109
Welding	
characteristics of in ductile iron	517
production of weldable Al diecastings	1195
White cast iron	
carbides and morphology	103
Wire injection	
converting gray iron to ductile	51

Y

Yellow brasses	
machinability of cast lead-free yellow brass containing graphite particles	225
Young's modulus	
accurate determination in ductile iron	721

